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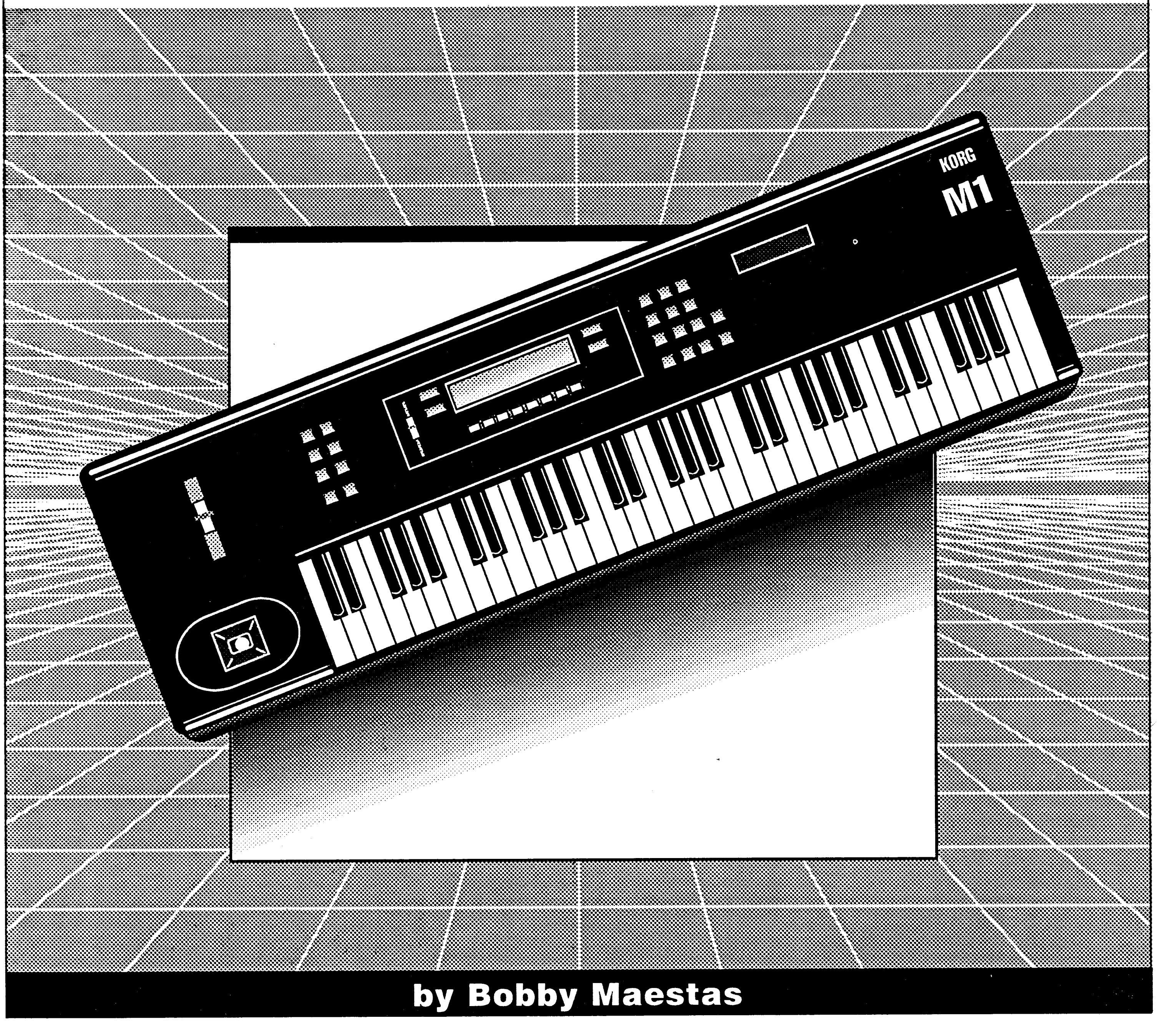
KORG M1

Sound Making Book Level 1

Covers: Setting Up, Memory Management, Creating & Editing Combinations, Studio Tweaking Procedures, Orchestral Combinations, Creating New Sounds by Editing Existing Programs, and *More!*



by Bobby Maestas

Korg M1

Sound Making Book

Level 1

By Bobby Maestas

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M1 Basics

Preface

Welcome to the third volume on the Korg M1. The M1's sound, capability, and portability has set a new trend in the industry. Enter the Music Workstation.

The M1's synthesizer section introduces Korg's Advanced Integrated synthesis. This combines their Digital Waveform Generation System (DWGS) utilized in their DW and DSS series, sampled waveforms utilized by the Ensoniq ESQ-1, and sampled partials as used in Roland's D-50.

Some other features of your M1 synthesizer section include:

- 16 Oscillator Sound Source
- 16 Voice Polyphony (Single Mode) or 8 Voice Polyphony (Double Mode)
- 5 octave, velocity and pressure sensitive keyboard
- Two 16-bit dual digital effects processors. Clean!
- 100 Programs and 100 Combinations

This text is about the care and feeding of the synthesizer section only. There is also a section on the effects. Since a music workstation is about making music, some tips for arranging and playing the different programs are included.

Have fun!

Bobby Maestes
Dallas, Texas
December 1988

Chapter 1

M1 Set Up

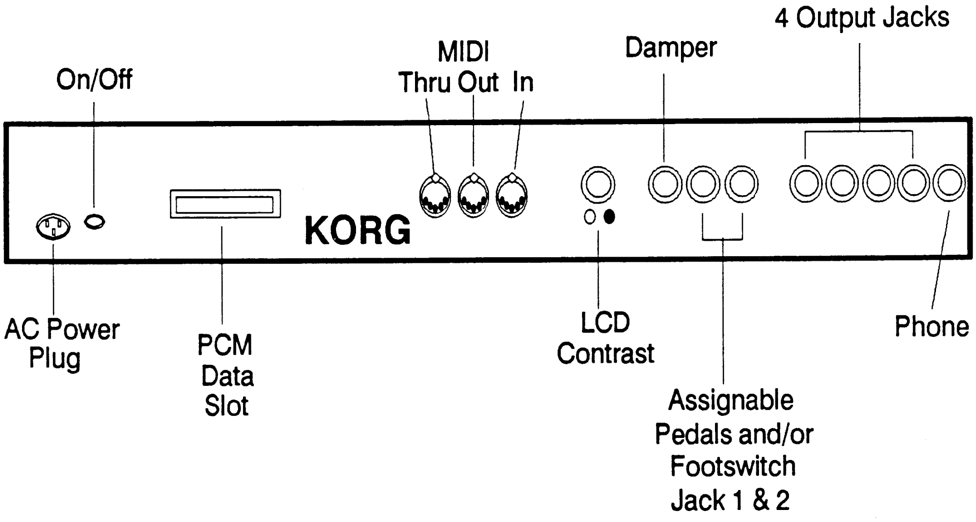
First things first. The M1 is a very versatile machine and it can be set up in many ways. This chapter outlines set up procedures as well as the structure of the M1. Ready? Let's get to it.

A/C Connections

The M1 comes with a detachable power cord that connects to the back of the machine. Protect your M1's circuitry by using a *Surge* or *Spike* suppressing power strip. You can find these at your local computer store or even some department stores.

Audio Connections

The M1 has 4(!) Audio outputs on the rear panel. They're labelled 1/L, 2/R, 3, and 4 on the top and OUTPUT on the bottom. See the illustration on the next page. (note: condensed view, not to scale)


4 Output Jacks
MIDI
Thru Out In
Damper
On/Off
KORG
AC Power Plug
PCM Data Slot
LCD Contrast
Phone
Assignable Pedals and/or Footswitch Jack 1 & 2

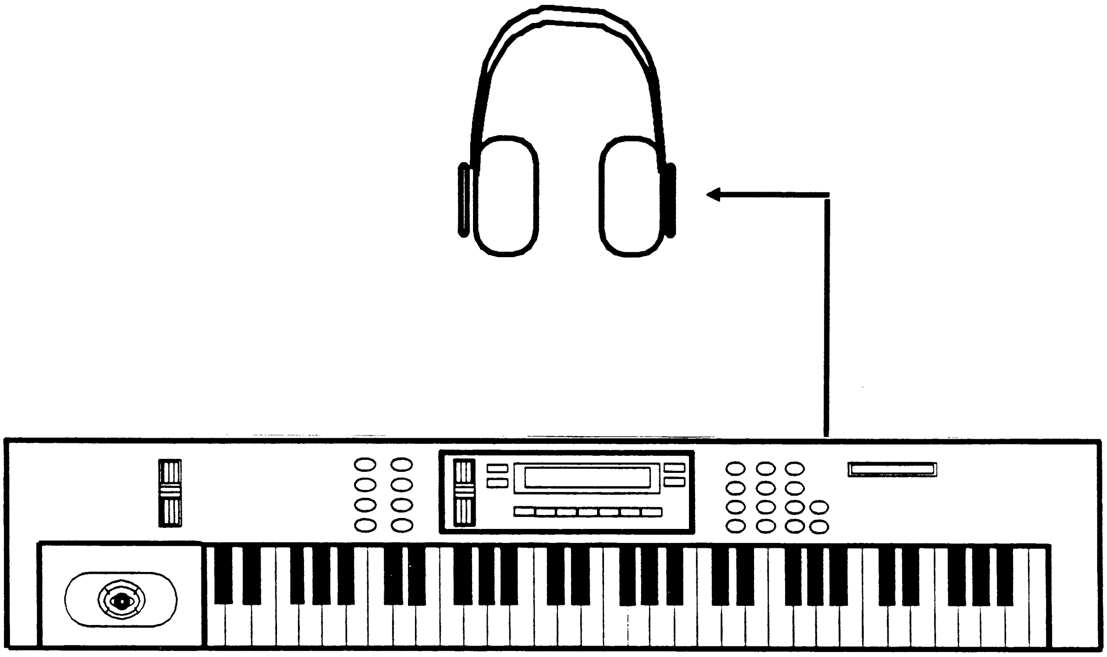
- 1/L is the Left Output
- 2/R is the Right Output
- 3 is an Auxillary Output
- 4 is an Auxillary Output

Outputs 1 and 2 are the most commonly used in everyday playing. Outputs 3 and 4 are one of the many luxury extras that the M1 provides us with.

Most of your sounds are assigned in the stereo field of the Left/Right outputs initially, while sounds that need separate outboard mixing and processing can be sent separately out of Outputs 3 and 4. For more setups please see page following.

Headphones

Plugging in a set of stereo headphones into the *Phones* jack in the back is an easy way to hear the M1. The output is identical to Outputs 1/L and 2/R. Many of the M1's features can be panned in the stereo spectrum and headphones are great for monitoring the detailed results.

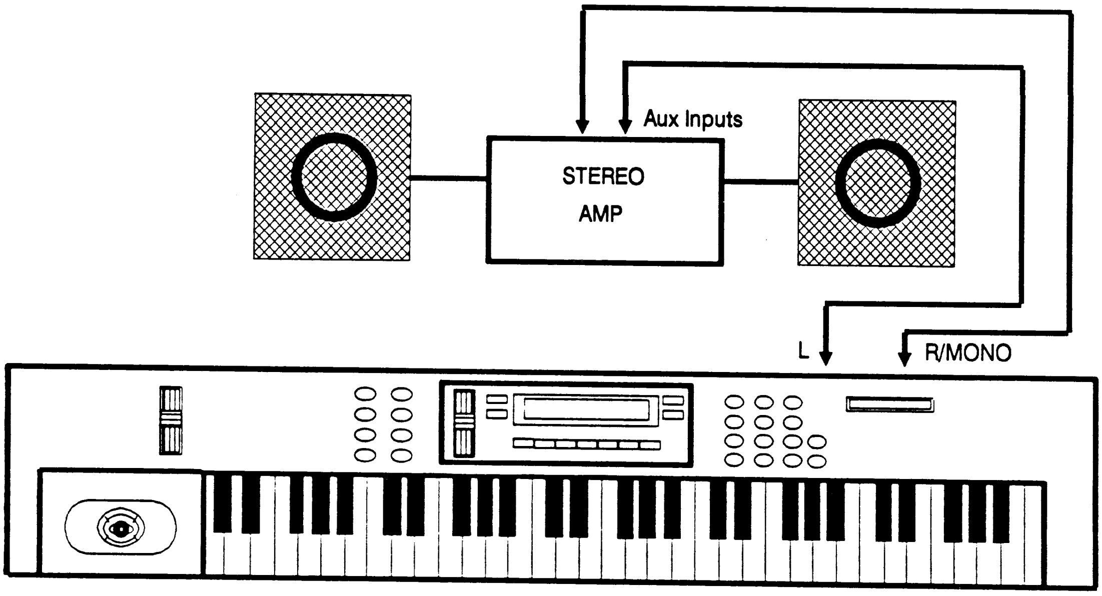


Stereo System

Your home stereo system is a good choice for monitoring your M1 for two reasons. It can reproduce all frequencies just like the M1, and it can do it in stereo.

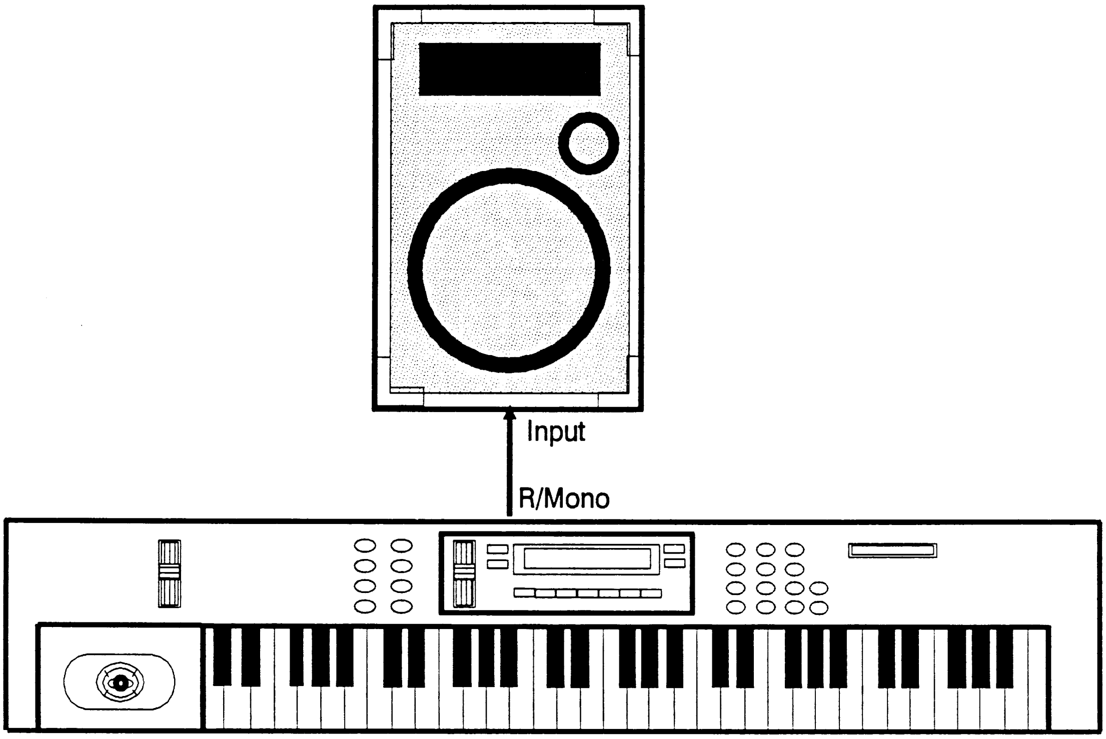
To connect the M1 to your home stereo system, you'll need two audio cables, each with a 1/4" plug on one end and an RCA jack on the other. Plug the 1/4" ends into the 1/L and 2/R jacks on the rear panel of the M1. Plug the RCA jacks into the *Auxilary Input* on your stereo amplifier.

The stereo treats the M1's signal just like a signal from a tape deck or CD player. However, the M1's signal can overload the receiver's input. Listen for distortion. If the speakers DO distort, turn the M1's volume DOWN and the receiver's volume UP to compensate. It's important to do this as distortion can damage your speakers.



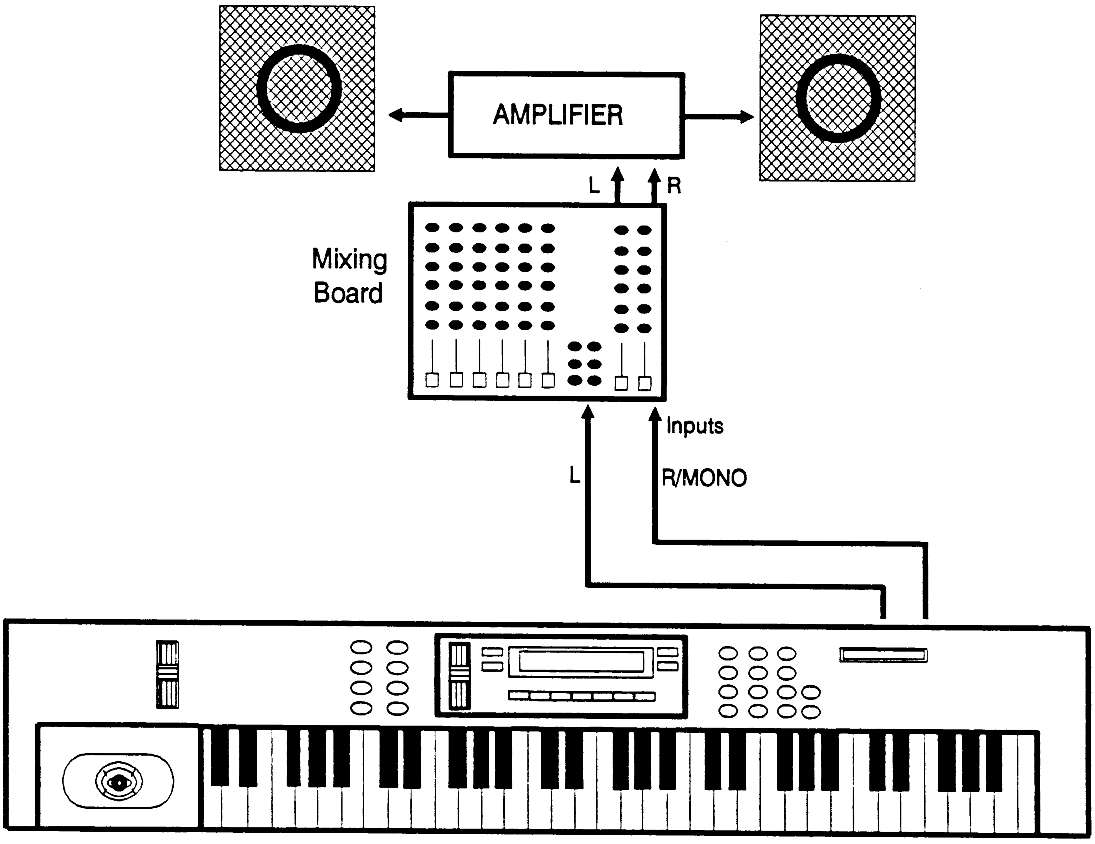
Keyboard Amp

There are many keyboard amps on the market today. They're portable, provide full frequency response, and come with a variety of features. When space and portability requirements are the top priority, these speaker/amp systems come out on top. The only drawback is that the amps can't reproduce the M1 in stereo. If the inputs are available on the amp, plug both the 1/L and 2/R Outputs on the M1 into the inputs of the amp.



Modular System

The most versatile of all these set ups, and the most professional, is the modular configuration. This system comes in three parts: the mixer, the power amp, and a set of speakers. Remember the M1 can take up to four inputs on the mixer, so purchase as many channels as you can afford to accomodate future expansion. Plug both the 1/L and 2/R Outputs on the M1 into the inputs of the mixer. If the inputs are available on the mixer, connect the 3rd and 4th Outputs as well.



NOTE: When using a modular system be sure to turn on the power amp last. *Turn the system off starting with the power amp, the mixer, then the M1. Turning the equipment on or off out of order can cause damage to your speakers.*

Chapter 2

M1 Overview

Heirarchy of the M1

The M1 is made up of three sections:

- Synthesizer Section
- Sequencer Section
- Effects Section

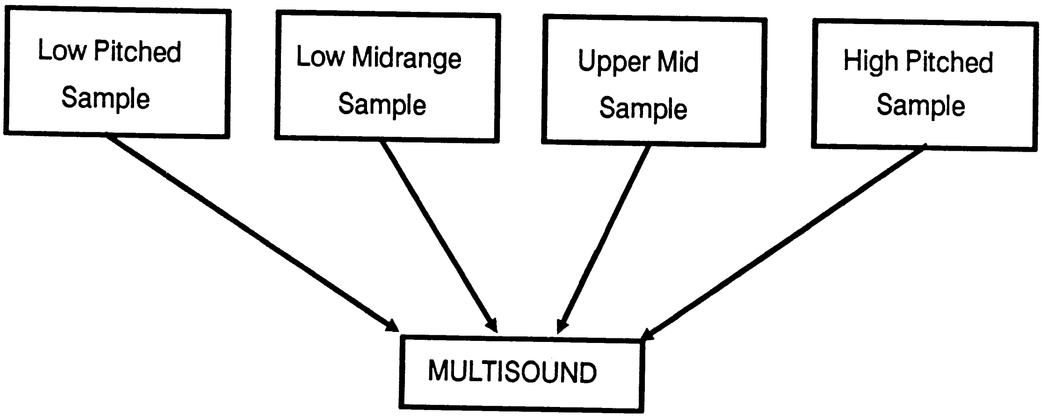
The M1 Synthesizer Section

With the M1, Korg introduced a system of synthesis they call *AI Synthesis*. *AI* stands for *Advanced Integrated.* AI Synthesis provides for a combination of three sound types:

- Sampled Sounds
- D.W.G.S. Waveforms
- Edited Sampled Waveforms

Sampled Sounds

Digital recordings are the rule now rather than the exception, and this technology has carried over to keyboard instruments by way of Sampling. For a more realistic effect, an instrument is often recorded or sampled across its range from its lowest notes to its highest notes to capture its many timbres.



NOTE: This does not *make the M1 a sampler. A sampler can record, edit, and store its own samples. The M1 can only play them back.*

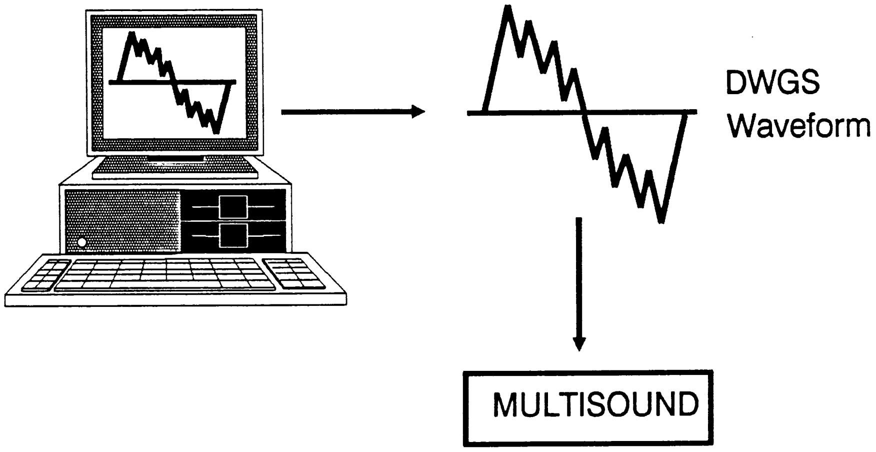
D.W.G. S. Waveforms

D.W.G.S. stands for Digital Waveform Generation System and was developed by Korg a few years ago. Korg has implemented it in their DW Series synthesizers, and in their DSS Series.

Here's how it works:

A sound is made up of *harmonics.* The number of harmonics and how loud each harmonic is determines the sound's *timbre.* This is called the sound's *harmonic spectrum.*

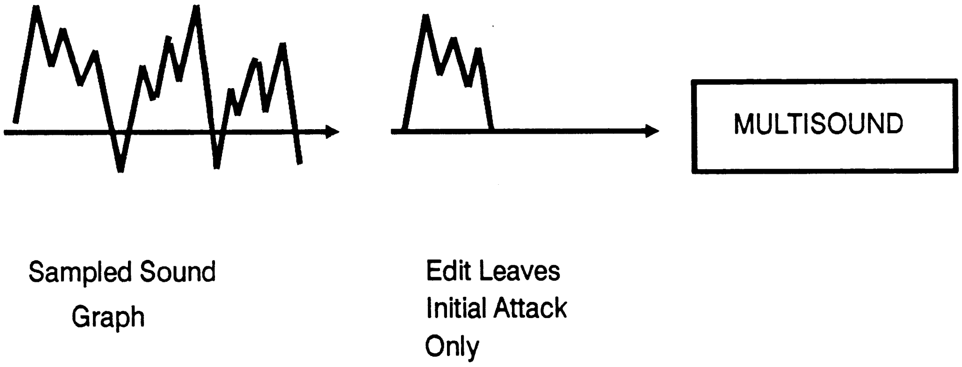
A sound's harmonic spectrum is analyzed. The harmonics are then recreated digitally (i.e. with a computer), one harmonic at a time until the essential character of the sound is achieved. The advantage of this is that complex timbres can be realized without using up large amounts of the synthesizer's memory. *Please see next page for illustration.*


DWGS
Waveform
MULTISOUND

Edited Sampled Waveforms

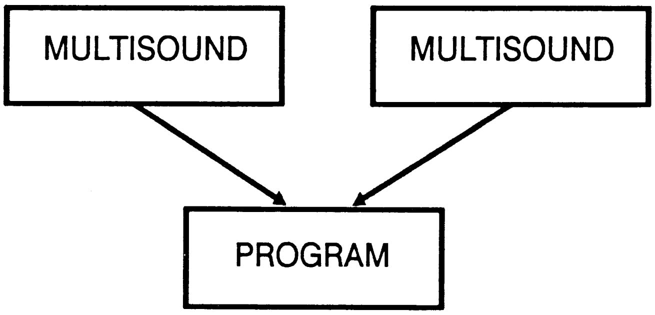
Analyzing sounds in this way brought about an interesting discovery about sound. The harmonics that made up the sound's timbre were found in the initial stages of the sound, or in synthesizer terms, the Attack.

Realizing this, Korg engineers have stored sampled *parts* in the M1's memory. They also edited out the non-harmonic frequencies to make the partials more musical sounding.

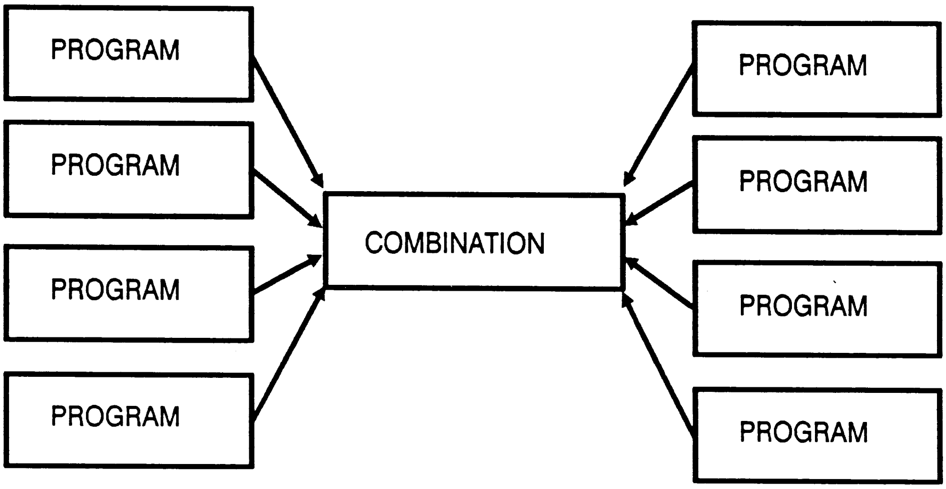

MULTISOUND
Sampled Sound
Graph
Edit Leaves
Initial Attack
Only

A sound's harmonic spectrum changes as it is played from low notes to the high notes. These waveforms are constructed and grouped together across its range - from low to high to compensate for this. Korg calls these groups *Multisounds*.

Up to two of these multisounds can be used to create a *Program.* A Program is a single sound that can be played across the keyboard, from the lowest note on the left to the highest note on the right. On power up, the M1 loads up I00 Universe. This is a Program. A Program is called a *Preset or Patch* by other manufacturers.


MULTISOUND
MULTISOUND
PROGRAM

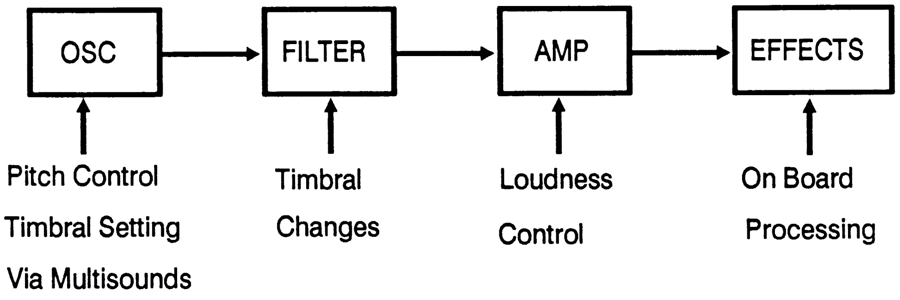
As many as eight Programs can be used to create a *Combination.*


PROGRAM
PROGRAM
PROGRAM
PROGRAM
COMBINATION
PROGRAM
PROGRAM
PROGRAM
PROGRAM

Synthesizer Functions

The M1 Program parameters that polish the multisounds into finished products are divided up into three sections:

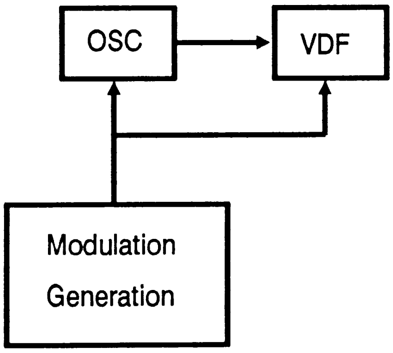
- Oscillator
- Variable Dynamic Filter (VDF)
- Variable Dynamic Amplifier (VDA)
- Effects


OSC
FILTER
AMP
EFFECTS
Pitch Control
Timbral Setting
Via Multisounds
Timbral
Changes
Loudness
Control
On Board
Processing

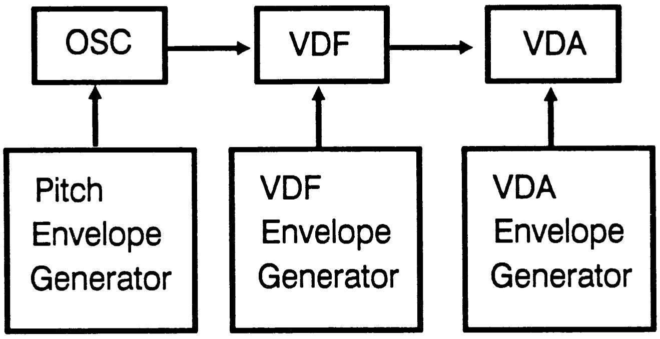
The Oscillator, the VDF, and the VDA are not *set and forget* sections. These, like the real sound elements they emulate, change over time. They're changed by *Modulation Generators and Envelope Generators.* Both of them modulate the Oscillators, the Filter, and the Amplifier in a specific way.

The Modulation Generator changes the pitch when it's applied to the Oscillator. Some of the results include vibrato and trills. See the Tweaking section for details about Vibrato.

When assigned to the VDF a fluctuation in timbre is the result. This can be a Wah-Wah, a growl, or even an on/off pulse effect.

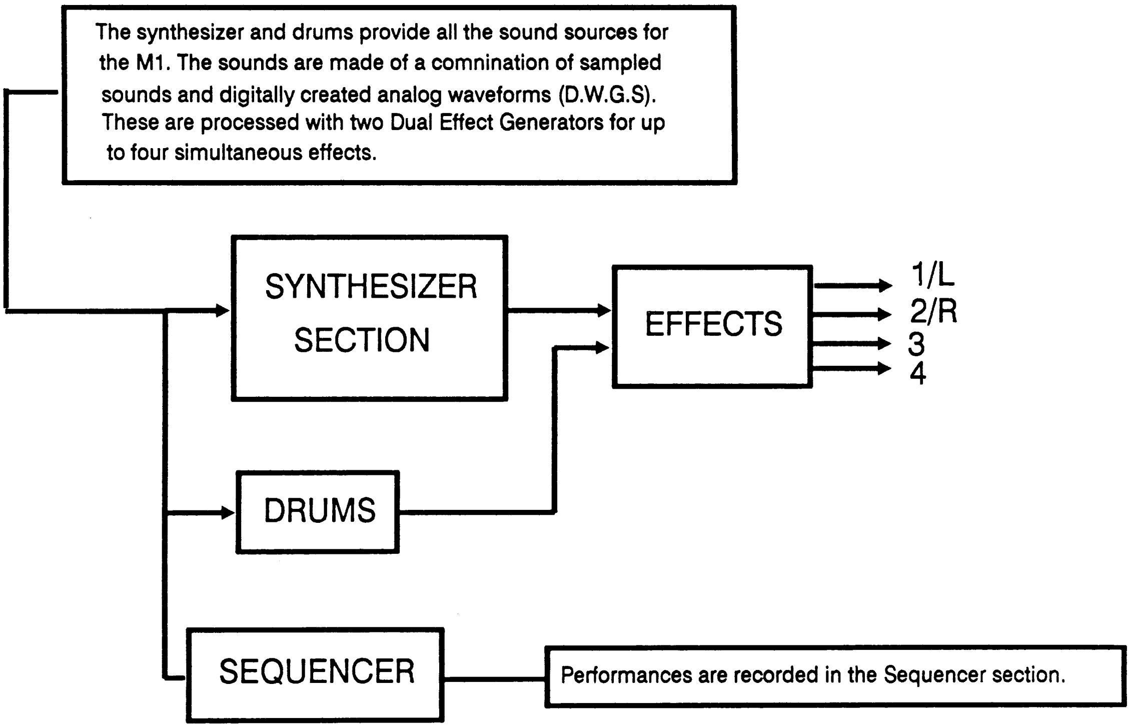

OSC
VDF
Modulation
Generation

The Envelope Generator modifies the Oscillator's pitch, the VDF, and the VDA in specific ways to fine tune the Program. More on this later.


OSC
VDF
VDA
Pitch Envelope Generator
VDF Envelope Generator
VDA Envelope Generator

The Big Picture

See the figure below. This is the complete structure of the M1. As you can see, just about everything you'll need to do music is in there.


The synthesizer and drums provide all the sound sources for the M1. The sounds are made of a comnination of sampled sounds and digitally created analog waveforms (D.W.G.S). These are processed with two Dual Effect Generators for up to four simultaneous effects.

SYNTHESIZER SECTION
EFFECTS
1/L
2/R
3
4
DRUMS
SEQUENCER

Performances are recorded in the Sequencer section.

The M1 features full MIDI control, making it ideal for a Master Control Keyboard.

The MIDI functions are explained in later chapter on MIDI.

The Synthesizer section and the Effects are the focus of this book. The M1 already has great sound. So we can build on what we already have. We'll take a Tweaking approach to the sounds and expand on the ideas already in the machine.

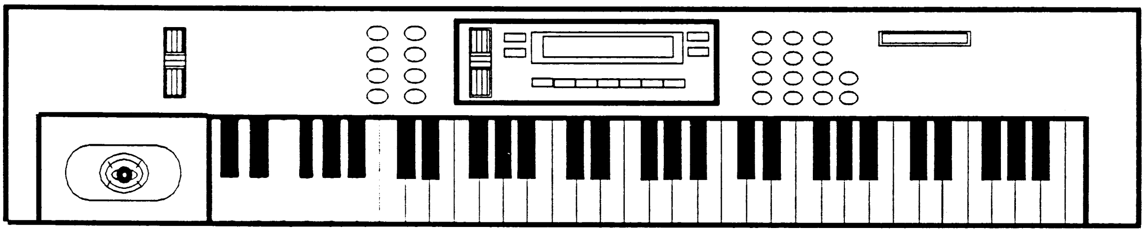
For Further Reading

The Sequencer section is explored in detail in *Korg M1 Sequencing and Recording Handbook* by Dan Walker.

Using the Drum kits is explored in detail in *Korg M1 Drum Pattern Handbook* by Dan Walker.

Both titles are available from Alexander Publishing.

Reading the M1 Front Panel



Master Volume Slider

Controls the M1's volume. It does *not* transmit the MIDI Volume command. This means that a MIDI slave device's volume cannot be controlled from this slider.

Int/Card Buttons

The M1 has two blocks of memory. These buttons select between Internal memory and Card memory.

Combination Buttons

Combination - Selects the Combination Play mode.

Edit Combination - Accesses the Edit menus for the Combination chosen in *Combination Play Mode.*

Program Buttons

Program - Selects the Program Play mode.

Edit Program - Accesses the Edit menus for the Program chosen in *Program Play Mode.*

Sequencer Button

Puts the M1 in Sequencer Mode. Record, playback, and edit sequences in this mode.

Global Button

General M1 parameters are accessed in this mode. Data transfer, MIDI functions, Tune, Pedal Assignments, Memory Protect and the like are found here.

Value Slider/Up&Down Buttons

These are the Data entry controls. The Value Slider is handy for coarse adjustments and/or broad sweeps. The UP/Down buttons change the value by one increment.

LCD Display

Center stage and the star of our show is the LCD display. If the M1 is doing anything at all, it tells you here. When you push any of these buttons I'm describing to you now, it tells you that too.

Cursor Keys (A-H)

The LCD often shows the M1's parameters from Left to Right. Simply and easily push the button underneath the parameter you wish to change and the cursor relocates instantly.

Page +/- Buttons

In Combination Mode (Multi)

1. Enter Combination Play mode by pressing the [Combi] button.

2. Call up I40 MIDIStack2 . Note that this is a Multi Combination.

3. Pressing [Page +] displays the Volume (specifically amplitude) Level of all 8 combinations. In this example, only the first four programs are used.

4. You can change the levels of each Timbre by pressing the Cursor button (A-H) and using the Value Slider and Up/Down buttons. Using the Value Slider, change the Level for Timbre 1 to 0. Play some lower notes on the keyboard.

5. While playing lower notes on the keyboard, slowly bring the level to 60. Hear the Synth Bass program creep in.

6. Press [Page -] button and the LCD displays the Program number or OFF for each Timbre.

7. Using the Value Slider, turn Timbre 1 to OFF. Play the lower half of the keyboard. The Synth Bass is gone.

8. Press the [Up] button and play the lower half of the keyboard. Notice the change in sound.

9. Turn each Timbre on and select (or change) the Program with the Value Slider and Up/Down Buttons.

The [Page +] and the [Page -] have no effect on Single, Layer, Split, and Velocity Switch combinations because they have only one editing page.

In Edit Combination Mode - Press [Page +] to scroll Forward through the Combination Edit pages. Press [Page -] to scroll backwards. Holding either button down enacts a continuous scroll.

In Edit Program Mode - Press [Page +] to scroll Forward through the Program Edit pages. Press [Page -] to scroll backwards. Holding either button down enacts a continuous scroll.

In Sequencer Mode - Press [Page +] to scroll Forward through the Sequencer parameter pages. Press [Page -] to scroll backwards. Holding either button down enacts a continuous scroll.

In Global Mode - Press [Page +] to scroll Forward through the Global pages. Press [Page -] to scroll backwards. Holding either button down enacts a continuous scroll.

10 Key Pad

In Combination and Program Play Modes - These select the number of the Program or Combination. Both must be entered as two digit numbers. Type *03* for Program 3, for example.

In Edit Combination and Edit Program Modes - Press [0] to return to the first page. Press [9] and you're at the last page. Buttons [1-9] access some of the most frequently used pages inbetween.

In Sequencer Mode and Global Mode - Each button is assigned to a specific page. Pressing [0] leaves you at the first page and pressing [9] accesses the last page.

Bank Hold Button

Enter Program mode by pressing the [Prog] button and press the [Bank Hold] button so that it's lit. The LCD reads *00 Universe.* Now press [7]. The LCD switched you to *07 Symphonic. 0* is the *Bank* number and cannot be changed while the Bank Hold button is lit. This is a convenience feature that frees you from the tedium of ALWAYS having to press two numbers for every sound you want.

Compare Button

While editing a Program or Combination, you are going to want to hear the original sound as a reference. This is what the Compare button is for.

1. Press the [Compare] button once and the original sound is back.

2. Press it again and you're back to your edited version. Be aware that using the [Compare] button always leaves you at the first editing page.

Record Button

Press this button to Record in Sequencer Mode.

Start/Stop Button

Pressing this button alternately Starts and Stops the sequencer in Sequencer mode (who would've guessed?).

Program/Sequence Data Card Slot

The M1 supports two types of card data. It's picky about which slot the data goes in and out of. This slot saves and loads Program and Sequence data.

Chapter 3

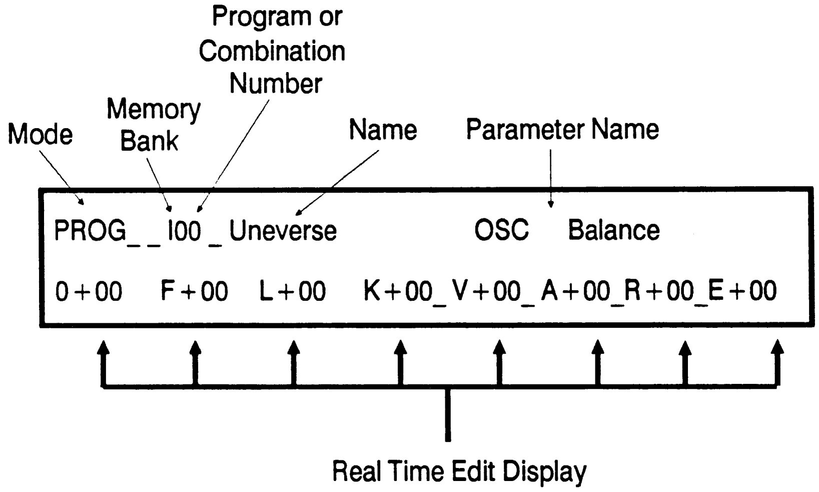
Memory Management

We've set up the M1 and understand how to get around on it. Right now let's examine the workings of the synthesizer in more detail. How does the M1 handle all of this data anyway? Let's find out. *Please see next page for following text and ilustrations.*

Calling Up Programs

The first order of business is to play the M1 and show off all those great sounds to all your friends. Here's how to call them up.

1. Press the [Prog] button to enter Program Play mode. When the M1 is first turned on, you automatically start in this mode. The LCD is shown below.


Program or Combination Number
Memory Bank
Mode
Name
Parameter Name
PROG_ _ I00 _ Uneverse OSC Balance
0+00 F+00 L+00 K+00_V+00_A+00_R+00_E+00
Real Time Edit Display

2. Enter any number between 00 and 99, and the assigned Program comes up. Always enter 2 numbers.

3. For your convenience, and out of the kindness of Korg's heart, a [Bank Hold] button has been installed on your M1. This relieves you of entering two digits for every program you have to call up. Press the [Bank Hold] button so that it lights up.

4. Now when you press any of the buttons on the 10 key pad, only the number on the right is changed.

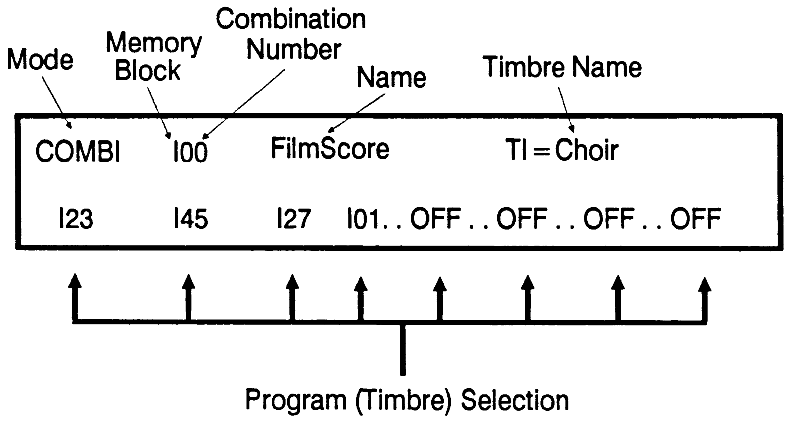
To change Banks, press [Bank Hold] so the light goes out. Pick the bank of your choice. To engage the [Bank Hold], just press the button again.

5. Press [Edit Prog], then press [Prog] again. This moves the cursor to the Program number on the top line of the LCD. Scroll through the Programs with the [Up/Down] buttons.

NOTE: Some of the early M1's could not do Step 5. If the cursor doesn't move to the top line, you have an earlier model.

Calling Up Combinations

1. Press the [Combi] button to enter Combination Play mode. The LCD is shown below.


Combination Number
Memory Block
Mode
Name
Timbre Name
COMBI I00 FilmScore TI = Choir
I23 I45 I27 I01.. OFF.. OFF.. OFF.. OFF
Program (Timbre) Selection

2 Enter any number between 00 and 99, and the corresponding Combination comes up. Remember to enter two digits.

3. The [Bank Hold] works in the same manner as it does in Program Play mode. Press the [Bank Hold] button so that it lights up.

4. Now when you press any of the buttons on the 10 key pad, only the number on the right is changed.

To change Banks, press [Bank Hold] so the light goes out. Select the bank of your choice. To engage the [Bank Hold], simply press the button again.

5. Press [Edit Combi], then press [Combi] again. This moves the cursor to the Combination number on the top line. Scroll through the Combinations with the [Up/Down] buttons.

NOTE: Again, some of the early M1's could not do Step 5. If the cursor doesn't move to the top line, don't worry - there's nothing wrong with your M1. It's just one of the earlier models.

RAM and ROM Cards

RAM and ROM cards are to the M1 what cassette tapes are to your home stereo cassette deck. The cassette deck can "feed" your system pre-recorded tapes, or tape information from other components in the system. Data cards (ROM and RAM) can do the same for your M1.

ROM Cards

ROM cards are the pre-recorded cassettes in the above story. As such, they have information, data if you will, already on them. This data can pertain to the Program, Combination and the Sequencer sections.

ROM stands for *Read Only Memory.* The ROM card cannot store any data sent to it from the M1 (or anything else). The data on a ROM card is permanent and cannot be erased.

RAM Cards

The M1 sends its data out of two ports - the MIDI out jack in the back of the machine, and out of the front panel slot.

A ROM card won't do us any good, we need a card that stores the data when the M1 sends it. Enter the RAM(bo) card. (I pity the fool! Oh yeah, wrong character. Sorry, back to work.)

What's a RAM card?

RAM is an acronym for Random Access Memory. Access is a fancy word meaning available. So memory in this card is available for data storage.

What types of data can the RAM card hold?

Program and Sequencer data. Just like the slot label says. In other words, all your hard work is stored there.

RAM cards are reliable and FAST. I recomend getting at least one of these to start, if you don't have one already. In fact, it's a good idea to have one ready at all times to store something that may come up when you least expect it.

Formatting RAM Cards

Like a computer disk, a RAM card must be formatted before it can work with the M1. A RAM card is a generic storage medium and the formatting process makes it compatible with the M1's operating system.

Helpful Hint: Get into the habit of formatting the RAM cards as soon as they're purchased. This way they're always ready to go. You won't want to stop to format a card when you're in the heat of creating your masterpiece.

Recommends using Korg MCR-03 RAM cards. It takes two of these to store all of the M1's internal memory data.

How to Format RAM Cards

NOTE: Newly purchased RAM cards must be formatted before they can be used. On previously used cards, all *data is irretrievably lost during the formatting process. Before formatting, make certain you have back up copies of any information you want to keep.*

1. The Format function is in the Global parameters section. Press the [Global] button.

2. Press #9 on the 10 key pad to access the Format page. The LCD reads *FORMAT CARD* on the top line, and *(50PROG/50COMB/4200SEQ) [FORMAT]* on the bottom line. The cursor blinks under the (50PROG...) part of the display.

   Please see next page for illustration

```
          Format    CARD
(     100PROG/100COMBI     )          [FORMAT]
```

There are three formatting functions available.

- PROG/COMBI format for storing bulk Program and Combination data. The bottom line of the LCD reads (100PROG/100COMBI) [FORMAT].
- PROG/COMBI/SEQ Card for storing approximately half of the M1's memory. The bottom line of the LCD reads (50PROG/50COMBI/4200SEQ) [FORMAT].
- SEQ card format for storing Seq(uence) data exclusively. The bottom line of the LCD reads (7700STEP SEQUENCE) [FORMAT].

3. Select the desired format function with the [Up/Down] buttons.

4. The display asks *Are You Sure?* Press the [G] cursor key under [Yes] to execute, and the [H] cursor key under [No] to cancel.

Saving and Storing Programs and Combinations

Part of the creative process involves creating and/or editing sound or, in Korg's words - Programs. And when we get that sound just right, we need to know how to save it. The process is exactly the same for Programs and Combinations.

Saving to RAM Card

1. Press [Global].The LCD reads *Master Tune* = ***.

2. Press [#6] on the 10 Key Pad to the Program Memory Protect page. Press [Down] to turn the card memory protect OFF.

When the Card Memory is ON, data cannot be written to the RAM card.

3. Press [#9] on the 10 key pad to the Save to Card page.

4. Select *PROG/COMBI, PROG/COMBI/SEQ, or SEQUENCE* with [Up/Down] keys.

   - PROG/COMBI saves all Programs and Combinations.
   - PROG/COMBI/SEQ saves all Programs, Combinations, and Sequence data. Two cards must be used to contain all the data.
   - SEQUENCE saves all Sequence data.

5. Press cursor key [G] or [H] to execute Save function.

6. The LCD asks *Are You Sure ?* Press [G] cursor to execute (Yes) and [H] cursor key (No) to cancel the function.

Saving to Internal Memory

Before the saving procedure can be executed, the INTERNAL memory protect must be off. See *Saving to RAM card - Steps 1 and 2.*

1. Press [Edit Prog]. The LCD displays the *Oscillator Basic* page.

2. Press [#9] on the 10 Key Pad to the Program Write/Rename page. The edited Program is displayed on the top line.

3. Using the value slider and the [Up/Down] buttons, enter the memory location for the new program. Remember, the program currently in that location is erased permanently after the next step.

4. The LCD asks *Are You Sure ?* Press [G] cursor to execute (Yes) and [H] cursor key (No) to cancel the function.

Loading from Card

1. Press [Global].The LCD reads *Master Tune = ***.*

2. Press [#6] on the 10 Key Pad to the Program Memory Protect page. Press [Down] to turn the internal memory protect OFF. When the Internal Memory is ON, data cannot be written into memory.

3. Press [#8] on the 10 key pad to the Load from Card page.

4. Select *PROG/COMBI, PROG/COMBI/SEQ, or SEQUENCE* with [Up/Down] keys.

- PROG/COMBI loads all Programs and Combinations.
- PROG/COMBI/SEQ loads all Programs, Combinations, and Sequence data. Two cards must be used to load all the data.
- SEQUENCE loads all Sequence data.

5. Press cursor key [G] or [H] to execute Load function.

6. The LCD asks *Are You Sure ?* Press [G] cursor to execute (Yes) and [H] cursor key (No) to cancel the function.

Data transfers are covered later under Performance Controllers.

Chapter 4

A Musical Approach To Programming

There are two approaches to programming a sound. The first, which this book spends the most time teaching you, is about the editing process and use of effects. The second is a musical approach with very little editing involved. Rather, this concentrates on creating a different sound by

- the way you play it
- the way you combine it with other sounds
- the way you voice it in harmony

We generally don't think of these musical aspects as part of the programming process. We just think of them as part of making music. But the professional keyboardist and arranger/composer does look at it as programming, because they put together sounds to create new sounds. In fact, a guiding rule in orchestration is that two sounds put together are *a new sound.*

In a very real sense, then, programming is orchestration and because of the wide choices available to you, the M1 is a very easy instrument to use to create very useful, musical sounds with a minimum knowledge of the editing process of synthesis.

So in this first section, we're starting the programming process by getting you to think and approach the M1 in a musical way, rather than from a pure synthesis viewpoint to start.

Know What the Instruments Sound Like

Top orchestrators and arrangers know what instruments sound like and what they don't sound like. They know how the instruments are played and how they aren't played. In other words, ears are more important than an oscilloscope readout. You can't create an effective string sound if you don't know what violins sound like. But it goes even beyond that since acoustic instruments have many different sounds and feelings depending on where within their range they're played in, the harmony of the music at the time, the rhythm of the piece. In short, all the musical factors.

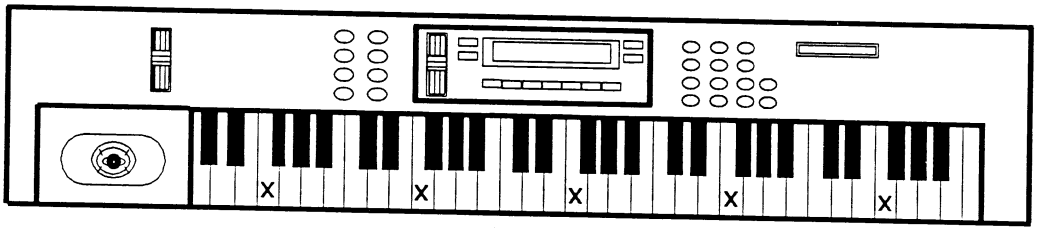
Instrument Range

Every pitch producing instrument has a high note and a bottom note it can play. This is called the *range.*

Here's an example of range on the keyboard:

1. Call up Program 03, *Ooh/Ahh.* This program is a combination of Voices multisound and Choir multisound. Pay special attention to the vocal quality.

2. Play staccatto notes on all the F's from low to high. See the figure below.



3. Look at the M1 keyboard. Where does the voice change from the Male voice to the Female voice? As we reach the top end of the male vocal range, Korg crossed over to the female voices. This is an example of awareness of range in programming.

As with the human voice, all instruments change timbre as they reach the top and the bottom of their ranges. Typically, they'll change timbre within their range as well.

4. Synthesizers are different from other instruments. They'll indiscriminantly play any note - in range or not. So it's up to us to use the sound only in its specific range - or creatively play out of its range. More on that idea later.

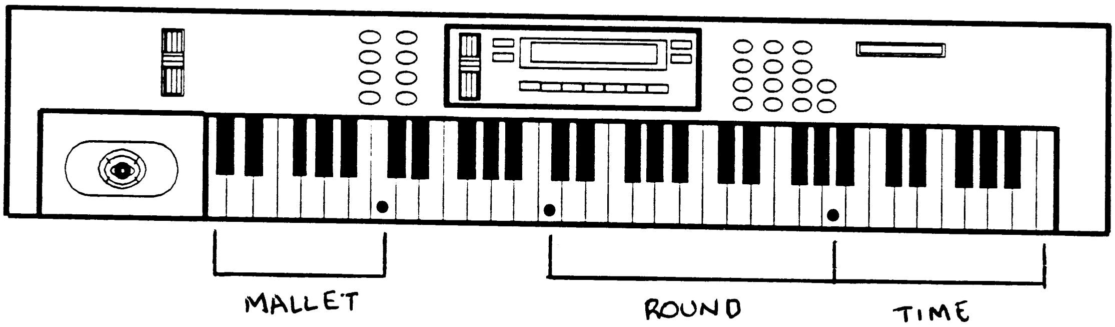
5. Play the low F on the keyboard. Admittedly it's a good sound, it's even vocal like, but it's not a realistic vocal sound. That's because nobody can sing that low. Technically, we're listening to an entire *group* of men singing *that* low - oh sure. What I'm getting at, is that those notes are *out of range.* Play at the very top of the keyboard and we're out of range again.

6. To effectively use the Programs, we must become aware of it's range.

Defining the Effective Range

The next step in working with a sound is to decide where it sounds best. If it's a synthesized acoustic sound, what is the range of that actual sound and where within that range does it fall? Next how does the patch sound above the effective range and then below it? If it's a new sound, where does it work best? Where are the sound changes above? Below?

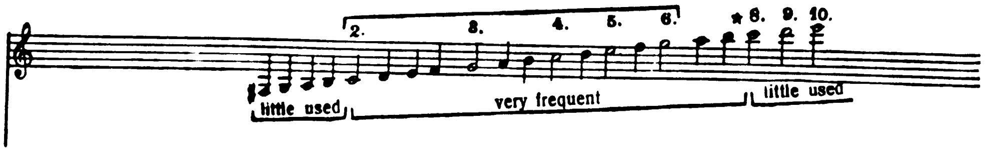
Try this for an example. Call up sound *I28 SynMallet.* Look at the keyboard below:



From C3 up, the round sound predominates. The higher you go, the more the mallet sounds like a little tine or glitter, especially at A above C4 (A880). From C2 down, the mallet sound predominates and the round sound with it has more of a sustaining log drum feel to it. While it's one sound, it clear has three or four spots in it where you do get a different sound and feel. Plus, how you articulate it should change.

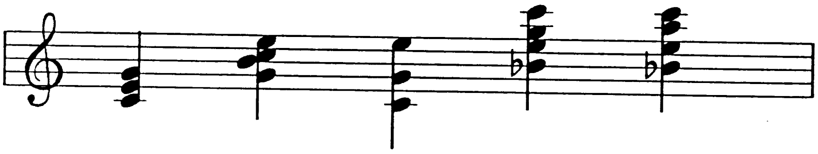
Call up *I12 Trumpet.* The effective range of a real Bb trumpet for a student player is A below Middle C (C3) to A below C5. A better student player can nail C5. And an above average player can get to D and E above that. After that, you need really professional players who can play up there and maintain a quality sound that's also in tune.

Let's test the M1 trumpet against the real thing.



In the effective range, the M1 does a good job of matching the real thing. It immediately stops sounding like a trumpet at D above C5. So here you have a new sound. Going down, it still sounds like a trumpet at A below C3, but the lower you go, especially at C2, you no longer have a trumpet. So again, you now have a new sound.

Now play the trumpets with the chords voiced below:



As long as you play the chords very short, it sounds like a good trumpet section. But now hold down the chords for a sustain. The vibrato is intense! And after a couple of pulses, it no longer sounds like a trumpet section. You have a new sound.

Above and Below the Effective Range

The next way to approach range is by *purposely* playing above and below its normal range in search of new textures and perhaps new musical applications for the Program. Of course to play OUT of range, we must understand what the normal range is in the first place - and how to play within it. Very often, utilizing a Program out of its range is only a matter of articulation - that is the kinds of keystrokes we use to play the patch. What kinds of keystrokes are available to the synthesist? Read on.

A unique challenge faces the synth keyboardist. It's not enough to have a proficient piano or organ technique. The fingers must learn to replicate the specific methods of articulation of wind instruments, bowed instruments, plucked instruments, and strummed instruments.

Two Kinds of Keystrokes

When playing any kind of keyboard, you have two basic kinds of keystrokes: staccato and legato. Staccato is a short attack where the notes are separate. Legato is where the notes are connected and flow. See the chart below:

Assignment - Call up each of these sounds and practise the Legato and Staccato techniques as indicated.

Chart of Instrument Playing Techniques

Struck Instruments	M1 Prog#	Legato	Staccato	Other
Snare Drum	09-F1-B1	x		
Timpani	37	x	x	
Wind bells	65&35			x
Cymbals	09-F2-B2			x
Xylophone	28	x	x	
Vibes	15	x	x	
Orchestra Bells	37	x	x	
Chimes/Other Bells	09-E5			x
Tambourine	09-C4		x	x
Triangle	B5 (not a triangle but close)			x

Plucked Instruments

Struck Instruments	M1 Prog#	Legato	Staccato	Other
Guitar	04	x	x	
Bass	66	x	x	
Kalimba	25			x

Strummed Instruments

Struck Instruments	M1 Prog#	Legato	Staccato	Other
Guitar	24	x	x	x

The important characteristic among this group is that the sound produced by each instrument has little or no sustaining power as a natural instrument. Later, we may alter that quality on the M1 by tweaking it, but we're getting ahead of ourselves.

Even though they have little sustaining power, most of the sounds, like the piano, have legato/staccato playing styles. However, it's the *way* you play legato and staccato that gives the Program it's unique sound and feel.

An example. Plucking is its own unique sound. So when playing the guitar sound, it's more than just playing the keyboard with a short staccato attack, it's playing staccato with a plucked *feel* and understanding through your ears that the duration of the note is shorter! Much of a program's realistic qualities come form doing just that, so its importance cannot be stressed enough.

Bowed Instruments

Struck Instruments	M1 Prog#	Legato	Staccato	Other
Violin	27	x	x	x
Viola	27	x	x	x
Cello	27	x	x	x
Bass	27	x	x	x

This is one of the toughest groups to mimic because they have so many different colors and shadings. For bowings there's martele, spiccato, detache, sul tasto, col legno, loure, and several others. Each bowing creates the phrasing and in cases like col legno, you get a completely different sound.

Wind Instruments

Struck Instruments	M1 Prog#	Legato	Staccato	Other
Piccolo	08	x	x	
Flute	08	x	x	
Oboe	32	x	x	
Bassoon	32	x	x	
Tenor Sax	22	x	x	
Trumpet	12	x	x	
Tuba	52	x	x	
Brass	02	x	x	

The woodwinds have a tremendous agility over the brass because of their fingering system which allows them to play rapid passages that are both diatonic (within the key) and chromatic (white and black notes). When assigning instruments to musical parts (orchestrating), consider that the reeds may sound more natural playing the 100 mph passages.

Because of the nature of the double reed, they can play longer melodies without taking a breath. The other instruments require more breathing and some space should be given between phrases for it to sound natural. Mimic these articulation ideas when simulating these instruments or orchestrating on the M1.

Using Velocity and Aftertouch

An important consideration in realistically recreating an instruments timbre is the way the instrument plays dynamically. Dynamic range is the spectrum of loudness from *p* (soft), to *ff* (loud!). The M1 defines this dynamic range with *velocity*. Velocity is how hard or soft the keys are struck. This lets you control the dynamics with your own playing technique through the keyboard. You can also use velocity to change the timbre from bright to dark.

While velocity lets us contol the initial part of the Program, *aftertouch* lets us change the sound *during* the sound. This is done by pressing harder on the keys *after* the note(s) is sounded.

Aftertouch (sometimes called *pressure*) can be a very effective tool for expressiveness and recreating an instruments unique way of saying things. This is because aftertouch in the M1 can control the Three Basic Elements of Sound.

What are these three elements? Good question! The three basic elements are Pitch, Timbre, and Loudness. ALL sounds have these three elements in one way or another. And since it's in your M1, you can control it with aftertouch.

- When aftertouch is controlling Pitch, pressing harder introduces change. This can be in the form of vibrato, or in the form of pitch bend.
- When controlling timbre, aftertouch is usually used to make the sound brighter.
- Pressing harder on the keys makes the sound louder when aftertouch controls loudness.

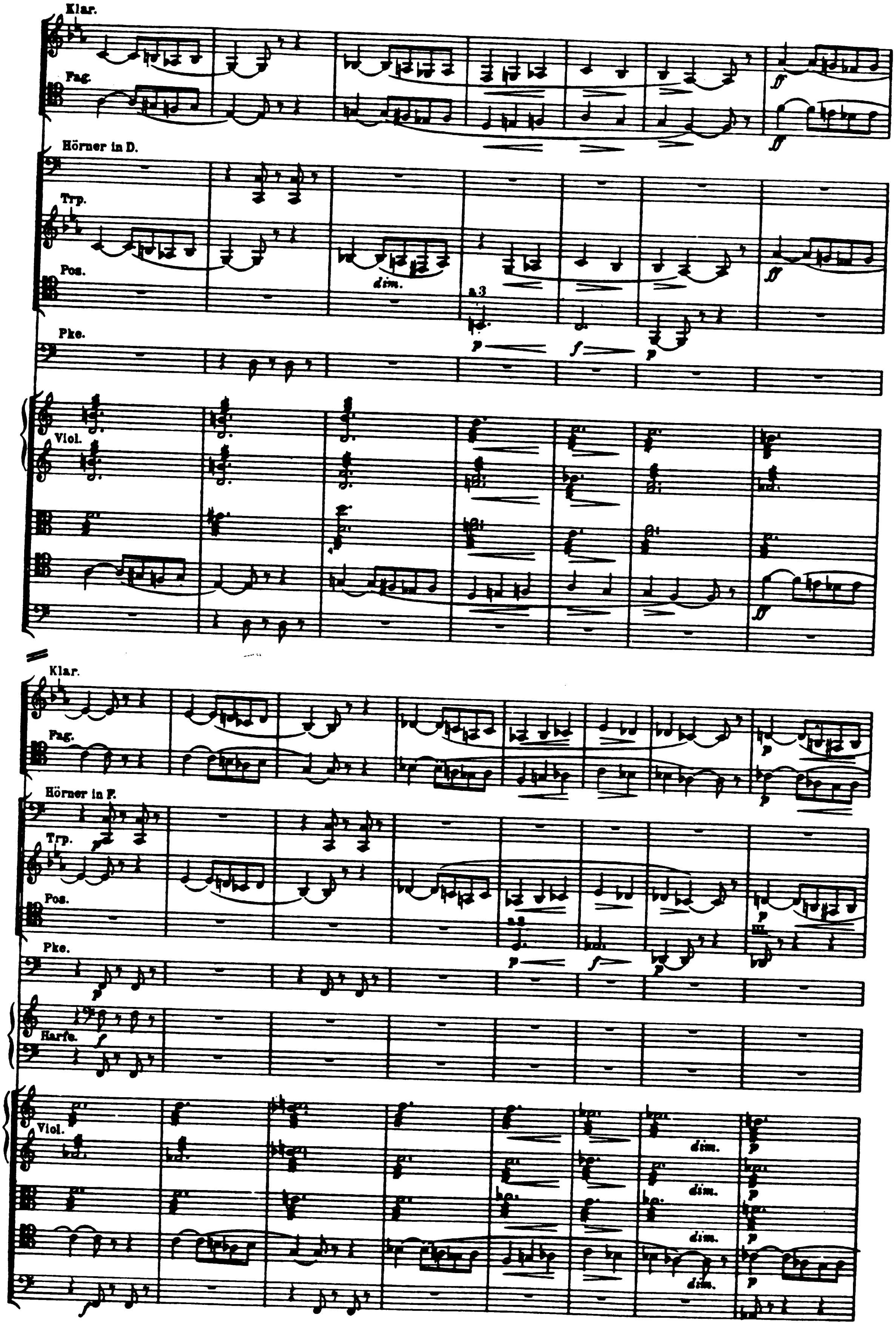
Creating Combinations

The M1 lets you put together up to 8 programs to make a combination. Composers, orchestrators and arrangers do that, too. They experiment and learn how to put instrument timbres together to create new colors. We'll first look at some examples. Later in the book, you'll learn the mechanics of how to put them together in the M1.

Carmen

For example, in the opening of the opera Carmen, we hear a very dark, mournful color playing the melody.

Please see next page


Klar.
Fag.
ff
ff
Hörner in D.
Trp.
dim.
ff
Pos.
a 3
p
f
p
Pke.
Viol.
ff
Klar.
Fag.
p
Hörner in F.
Trp.
Pos.
a 3
p
f
p
p
III.
Pke.
p
Harfe.
f
Viol.
dim.
dim.
dim.
dim.
p
p
p
p
p
f
p

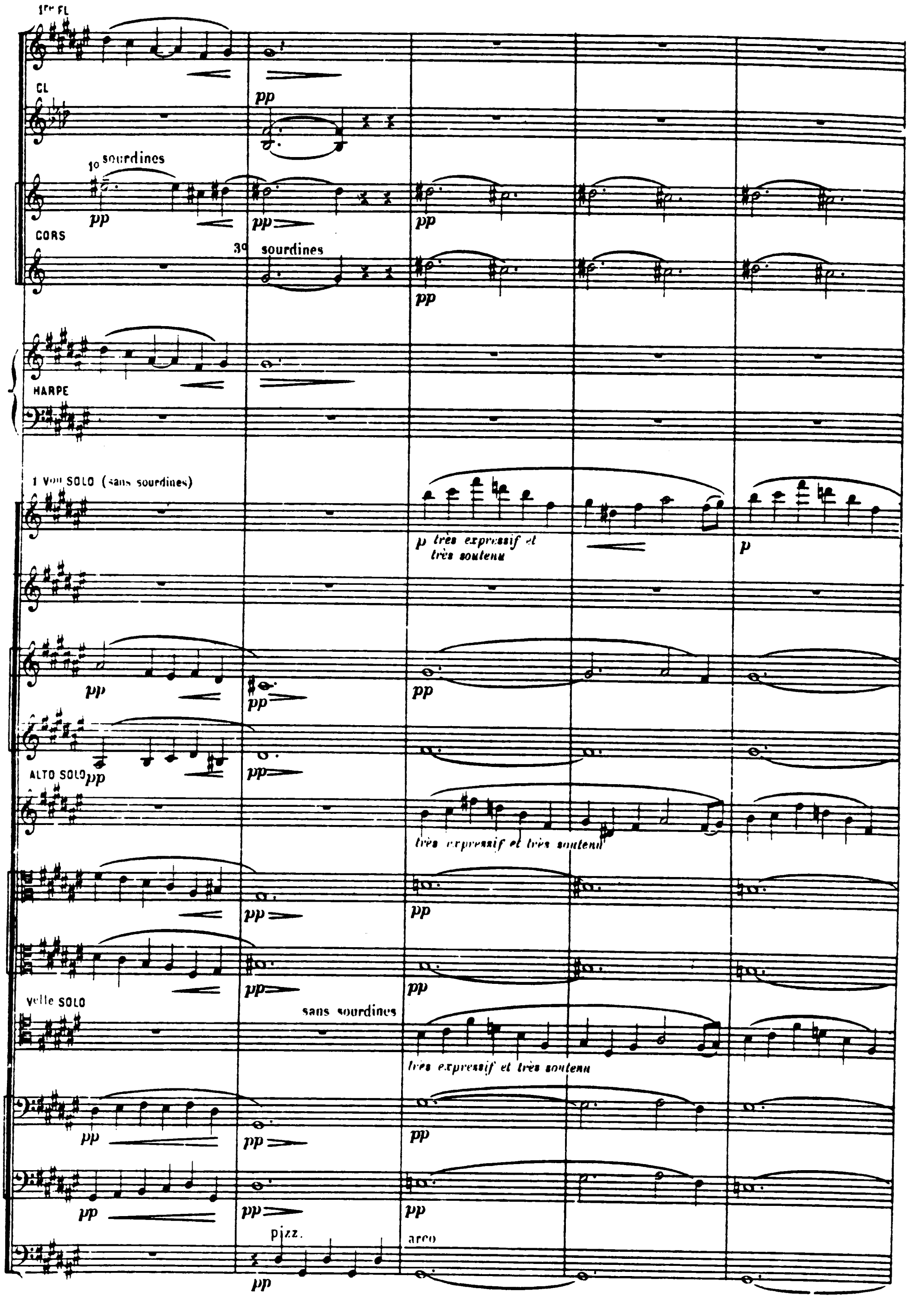
That color is a combination of four instruments playing exactly in unison: trumpet, bassoon, clarinet and cello. To get the sound, the trumpet and the clarinet go to the very bottom of their ranges. The bassoon is in its mid to upper register and the cello is in its low to mid register.

I can get close to this combination by using *I07 Symphonic, I12 Trumpet,* and *I32 Double Reed.* The M1 has no clarinet sound on it, so to get, you have to use another concept of programming which, to coin a phrase, is to synthesize the sound through the onboard programming parameters. However, see later in this book because i created a new clarinet sound for you.

Please see next page

La Mer

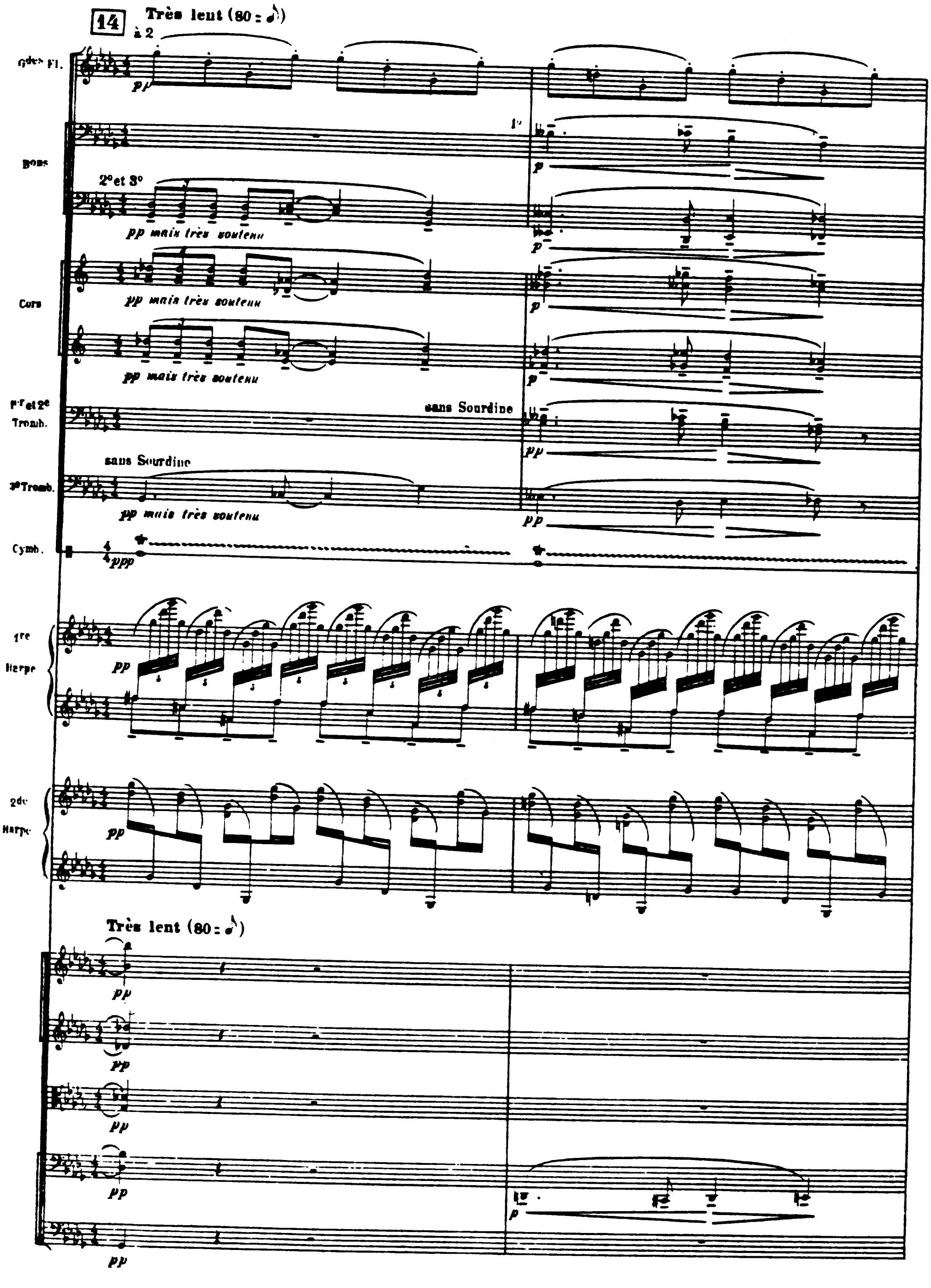
Here's another example from Debussy's famous piece, *La Mer:*


1re FL
CL
1o sourdines
CORS
3o sourdines
HARPE
1 Von SOLO (sans sourdines)
ALTO SOLO
vlle SOLO
sans sourdines
pizz.
arco
p très expressif et très soutenu
très expressif et très soutenu
pp
p

Here we have another dark color on the melody, but this time it's the English Horn and a muted trumpet in unison. I can come close to this sound by using *I82 Muted Trp.* and *I32 Double Reed*

More From La Mer

Here's another idea, also from *La Mer:*


14
Très lent (80 = ♪)
à 2
Gdes Fl.
pp
Bons
1er
p
2e et 3e
pp mais très soutenu
Cors
pp mais très soutenu
pp mais très soutenu
1er et 2e Tromb.
sans Sourdine
pp
sans Sourdine
3e Tromb.
pp mais très soutenu
pp
Cymb.
ppp
1re Harpe
pp
2de Harpe
pp
Très lent (80 = ♪)
pp
pp
pp
pp
p
pp

Here we have the French Horn section expanded by using the Bassoons. I can get this sound by using *I87 Soft Horns* along with *I32 Double Reed.*

What I've done here is to look at programming through musical eyes, the eyes of the orchestrator, the musical painter. When I put two or more sounds together in unison, or in harmony, *I get a new sound.*

That's *programming.*

Make New Sounds by Voicing the Chords

When I put two or more sounds together harmonically in a chord voicing, I also get a new sound. That's programming, too. For example, I can take *I12 Trumpet* and voice it in thirds and sixths with *I22 Solo Sax.* I can put the whole combination together on a triad with the trumpet on top and the sax voiced on the two lower notes of the triad. Either way, I initially get a solid jazz sound. I said *initially* because to pull it off, you have to play the M1 keyboard in such a way that it breathes and phrases like the trumpet player would. Again, to do that, you have to have that sound in your ears so your fingers can play it. Knowing that is orchestration!

To get you going, here are a set of seventh chord voicings from Music Basics. Experiment using the following procedure:

1. Take any one sound like *SynMallet* and play it using each of the voicings below. Check off which voicings work best with the sound.

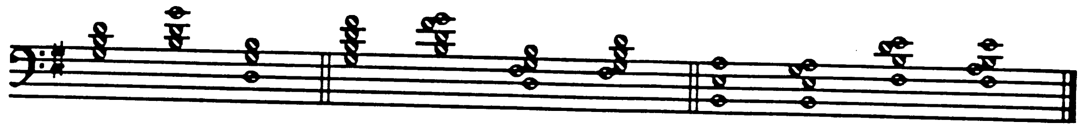
2. When you've learned how to layer sounds and assemble the combinations, take each new combination you've created and find where it works best in unison, then in octaves.

3. With the same combinations, apply them to the voicings below to see which ones work best with that sound.

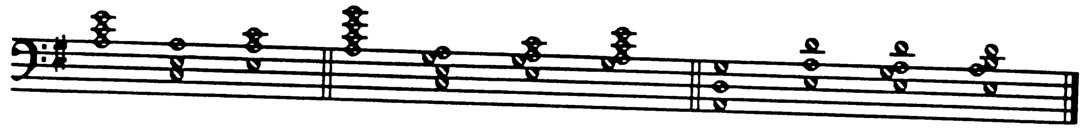
Once you've completed this, experiment using some of these voicings taught in *Teach Yourself Keyboard Playing and Improvisation Volume 2*:

Please see next page

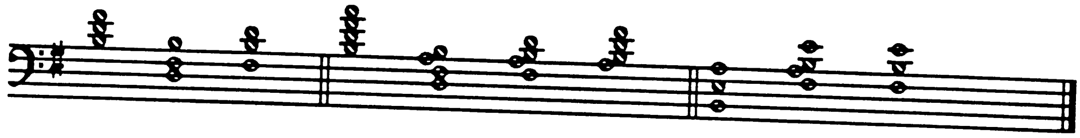
G Maj I/Ionian



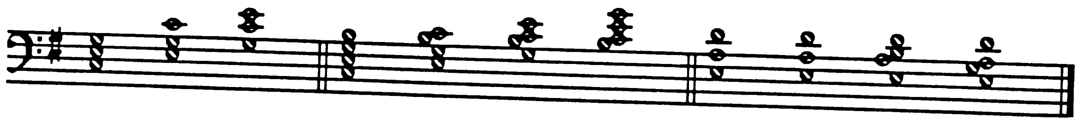
A Min ii/Dorian



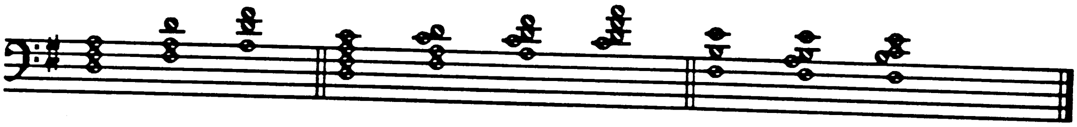
B Min iii/Phrygian



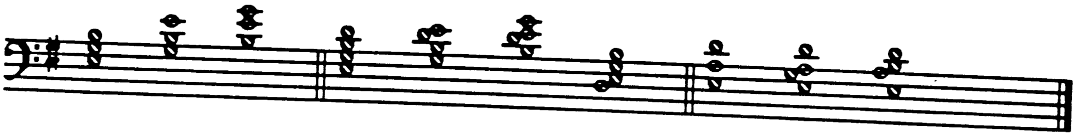
C Maj IV/Lydian



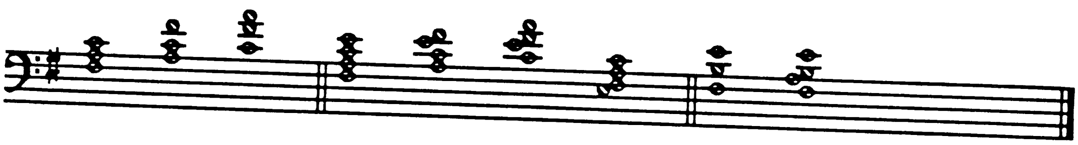
D Dom V/Mixolydian



E Min vi/Aeolian



F#minb5 viiminb5/Locrian



The M1 Programs

The M1's programs are made up from two sources: Multisounds and Drums. They are arranged in a logical order as shown below.

List of Programs

New Age Pads

00 Universe
10 Pan Mallet
20 Dream Pad
30 Lore
40 Magician
50 Bambu Trem
60 Cloud Nine
70 MagicOrgan
80 BrehTell
90 Zephyr

Percussive Keyboards

01 Piano 16'
11 E. Piano 1
21 MagicPiano
31 Harpsicord
41 Piano 8'
51 E. Piano 4
61 Clav
71 E.Piano 2
81 Digital 2
91 E.Piano 3

Horns

02 Brass 1
12 Trumpet
22 Solo Sax
32 DoubleReed
42 Overture
52 TubaFlugal
62 Tenor Sax
72 BrehBell
82 Mute Trp.
92 Synth Brass

Vocal Pads

03 Ooh/Ahh
13 Nimbus
23 Choir
33 Bottles
43 Angels
53 Voice Wave
63 Voices
73 FV Wave
83 Stratos
93 Digital 5

Picked/Strummed Instruments

04 Guitar 1
14 DistGuitar
24 12-String
34 Koto Trem
44 Sitar 1
54 Guitar 2
64 RockGuitar
74 PickGuitar
84 Sitar 2
94 E.Guitar 1

Bells

05 BottleBell
15 Vibes
25 Kalimba
35 Bell Ring
45 Tubular
55 Metal Hit
65 Windbells
75 Digi-Bells
85 Flexatone
95 Rhythm

Basses

06 Fretless
16 Pick Bass
26 A.Bass
36 SynthBass1
46 Slap Bass
56 SynthBass2
66 SynthBass3
76 AnalogBass
86 Digital 4
96 Mono Synth

Catch-All

08 Pan Flute
18 Flute
28 SynMallet
38 Solo Synth
48 Wire
58 Pan Wave
68 Block
78 Vibe Hit
88 HellsBells
98 Wait ......

Organs/Orchestral

07 Symphonic
17 Organ 2
27 Strings
37 Timp&Bells
47 Pipe Organ
57 StringRise
67 Organ 1
77 Ping Wave
87 Soft Horns
97 Hold ......

Percussion

09 Drums #1
19 Pole
29 Drums #2
39 Pop
49 Drum #3
59 Hammer
69 FingerSnap
79 Pluck
89 Drop
99 Surprise!!

Multisound List

00 Piano
01 E.Piano 1
02 E.Piano 2
03 Clav
04 Harpsichord
05 Organ 1
06 Organ 2
07 MagicOrgan
08 Guitar 1
09 Guitar 2
10 E. Guitar
11 Sitar 1
12 Sitar 2
13 A. Bass
14 Pick Bass
15 E. Bass
16 Fretless
17 SynthBass 1
18 SynthBass 2
19 Vibes
20 Bell
21 Tubular
22 Bell Ring
23 Karimba
24 KarimbaNT
25 SynMallet
26 Flute
27 Pan Flute
28 Bottles
29 Voices
30 Choir
31 Strings
32 Brass 1
33 Brass 2
34 Tenor Sax
35 Mute TP
36 Trumpet
37 TubaFlugel
38 DoubleReed
39 Koto Trem
40 Bamboo Trem
41 Rhythm
42 Lore
43 Lore NT
44 Flexatone
45 Windbells
46 Pole
47 Pole NT
48 Block
49 Block NT
50 FingerSnap
51 Pop
52 Drop
53 Drop NT
54 Breath
55 Breath NT
56 Pluck
57 Pluck NT
58 Vibe Hit
59 Vibe Hit NT
60 Hammer
61 Metal Hit
62 Metal Hit NT
63 Pick
64 Distortion
65 Dist NT
66 Bass Thumb
67 BasThumNT1
68 BasThumNT2
69 Wire
70 Pan Wave
71 Ping Wave
72 Fv Wave
73 Mv Wave
74 Voice Wave
75 Voice WvNT1
76 Voice WvNT2
77 DWGS E.P.1
78 DWGS E.P.2
79 DWGS E.P.3
80 DWGS Piano
81 DWGS Clav

82 DWGS Vibe 1
83 DWGS Bass 1
84 DWGS Bass 2
85 DWGS Bell 1
86 DWGS Organ 1
87 DWGS Organ 2
88 DWGS Voice
89 Square Wave
90 Digital 1
91 Saw Wave
92 Digital 2
93 25% Pulse
94 10% Pulse
95 Digital 3
96 Digital 4
97 Digital 5
98 DWGS TRI
99 DWGS Sine

Drum Sound List

01 Kick 1
02 Kick 2
03 Kick 3
04 Snare 1
05 Snare 2
06 Snare 3
07 Snare 4
08 Side Stick
09 Tom 1
10 Tom 2
11 Closed HH 1
12 Open HH 1
13 Closed HH 2
14 Open HH 2
15 Crash
16 Conga 1
17 Conga 2
18 Timbales 1
19 Timbales 2
20 Cowbell
21 Claps
22 Tambourine
23 E. Tom
24 Ride
25 Rap
26 Whip
27 Shaker
28 Pole
29 Block
30 FingerSnap
31 Drop
32 Vibe Hit
33 Hammer
34 Metal Hit
35 Pluck
36 Flexa Tone
37 Windbell
38 Tubular 1
39 Tubular 2
40 Tubular 3
41 Tubular 4
42 Bell Ring
43 Metronome 1
44 Metronome 2

Guidelines for Combining Sounds

Now that you have this magnificent list, here are some general guidelines of how to put together sounds to create effective and useful combinations.

Flute

Good in unison combinations alone, with other woodwinds. Effective in doubling unison with trumpets and an octave above. Very effective in doubling high string lines. Excellent with guitar in unison or harmony, particularly thirds and sixths.

Clarinet

Combines well with double reeds, trumpet and French Horn. Works well in thirds and sixths alone. Also good with vibes. The M1 lacks a clarinet sound, so I made up one for you. Enter it at your our leisure.

Enter this Clarinet sound.

1. **Osc Basic Page [0]**

   Osc Mode : Single
   Voice Mode : Poly
   Hold: Off
   MultiSound : 89
   Osc Lev : 79
   Octave : 8'
   Interval : --
   Detune : --
   Delay Start :--

2. **Pitch EG**

   Start Lev : 0
   Attack Time : 0
   Attack Lev : 0
   Decay Time : 0
   Release Time : 0
   Rel Lev : 0
   ev Vel Sen : 0
   Time Vel Sen : 0

3. VDF

Cutoff : 32
EG Intensity : 31

4. VDF EG

Attack Time : 08
Attack Lev : +47
Decay Time : 82
Break Point : +01
Slope Time : 99
Sus Lev : 00
Release Time : 99
Release Lev : +99

5. VDF Vel Sens

EG Intensity : +39
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

6. VDF Kybd Track

Center Key : F#3
Cutoff : -27
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

7. VDA EG

Attack Time : 08
Attack Lev : +90
Decay Time : 16
Break Point : +99
Slope Time : 93
Sus Lev : 00
Release Time : 08

8. VDA Vel Sens

Amplitude : +52
EG Time : 50
Attack Time : +
Decay Time : 0
Slope Time : 0
Release Time : 0

9. VDA Kybd Track

Center Key : F#3
Cutoff : 00
EG Time : 41
Attack Time : +
Decay Time : 0
Slope Time : 0
Release Time : 0

10. Pitch MG

Waveform : Triangle
Frequency : F64
Delay : 00
Intensity : 00
Osc Select : Both
Key Sync : On

11. **VDF MG**

Waveform :Triangle
Frequency : F64
Delay : 00
Intensity : 00
Osc Select : Both
Key Sync : Off

12. **Aftertouch**

Pitch : 00
Pitch MG : 00
VDF Cutoff : 00
VDFf MG : 00
VDA Amplitude : 00

13. **Joystick**

Pitch Bend : +02
VDF Sweep Int : 00
Pitch MG Int : 05
Pitch MG Freq : MF0
VDF MG Int : FM 05
VDF MG Freq : MF 0

Saxophone

Good as solo, in tight harmony and occassionally in octaves. Can be voiced with French Horns, Trumpets and Trombones in mixed groups. Interesting when doubled with the bass.

Bassoon

On the M1, the bassoon sound is called *Double Reed* and is very versatile. Effective in octaves, unison and as a solo instrument. Double with low strings or bass line for extra clarity. Double with clarinet in unison/octave/harmony. Double with flute in unison or octave. Voice under French horns in harmony. Effective with trombones. Can also have timpani double certain lines.

French Horn

French horns are represented on the M1 by *Soft Brass.* Very effective in unison and octave solos, used as the bass for pedal. Works very well in harmony when voiced over the trombones. Can also be use to double trumpets when voiced in triads for fanfares. Works well in sixths and open fifths.

Trumpet

Effective unison and octave, thirds and sixths, also open fifths. Doubles well with the flute, clarinet, oboe, and bassoon. Very effective in combinations with guitar, flute and sax.

Piano

Effective in combination with guitar and vibes, flute in either unison, octave or light harmony like thirds and sixths.

Vibes

Good alone or in unison with piano, clarinet, guitar. Effective in light harmony with guitar and flugel horn.

Trombone

The M1 lacked a trombone sound, so here's one I made for you. Enterit at your leisure.

1. **Osc Basic Page [0]**

   Osc Mode : Double
   Voice Mode : Poly
   Hold: Off

2. **Osc Basic Page Osc-1**

   MultiSound : 91
   Osc Lev : 50
   Octave : 16'

3. Osc Basic Page Osc-2

MultiSound : 37
Osc Lev : 50
Octave : 16’
Interval : --
Detune : --
Delay Start :--

4. Pitch EG Osc-1

Start Lev : -01
Attack Time : 0
Attack Lev : 0
Decay Time : 0
Release Time : 0
Rel Lev : 0
ev Vel Sen : 0
Time Vel Sen : 0

5. Pitch EG Osc-2

Start Lev : -02
Attack Time : 0
Attack Lev : 0
Decay Time : 0
Release Time : 0
Rel Lev : 0
ev Vel Sen : 0
Time Vel Sen : 0

6. VDF 1

Cutoff : 0
EG Intensity : 76

7. VDF1 EG

Attack Time : 14
Attack Lev : +92
Decay Time : 45
Break Point : +57
Slope Time : 44
Sus Lev : 82
Release Time : 0
Release Lev : 0

8. VDF Vel Sens

EG Intensity : +20
EG Time : 00
Attack Time : +
Decay Time : 0
Slope Time : 0
Release Time : 0

9. VDF Kybd Track

Center Key : F#3
Cutoff : -13
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : +
Release Time : 0

10. VDF 2

Cutoff : 0
EG Intensity : 80

11. VDF2 EG

Attack Time : 03
Attack Lev : +99
Decay Time : 45
Break Point : +57
Slope Time : 44
Sus Lev : 82
Release Time : 0
Release Lev : 0

12. VDF2 Vel Sens

EG Intensity : +00
EG Time : 00
Attack Time : +
Decay Time : 0
Slope Time : 0
Release Time : 0

13. VDF2 Kybd Track

Center Key : C-1
Cutoff : 0
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

14. VDA1 EG

Attack Time : 02
Attack Lev : +99
Decay Time : 82
Break Point : +85
Slope Time : 87
Sus Lev : 87
Release Time : 02

15. VDA1 Vel Sens

Amplitude : +74
EG Time : 99
Attack Time : +
Decay Time : 0
Slope Time : 0
Release Time : 0

16. VDA1 Kybd Track

Center Key : F#3
Cutoff : 00
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

17. VDA2 EG

Attack Time : 02
Attack Lev : +99
Decay Time : 00
Break Point : +99
Slope Time : 00
Sus Lev : +99
Release Time : 00

18. VDA2 Vel Sens

Amplitude : 0
EG Time : 0
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

19. VDA2 Kybd Track

Center Key : F#3
Cutoff : 00
EG Time : 00
Attack Time : 0
Decay Time : 0
Slope Time : 0
Release Time : 0

20. Pitch MG

Waveform : Triangle
Frequency : F64
Delay : 10
Intensity : 01
Osc Select : Both
Key Sync : On

21. VDF MG

Waveform :Triangle
Frequency : F55
Delay : 58
Intensity : 11
Osc Select : Both
Key Sync : On

22. Aftertouch

Pitch : 00
Pitch MG : 02
VDF Cutoff : +05
VDFf MG : +06
VDA Amplitude : +22

23. Joystick

Pitch Bend : +02
VDF Sweep Int : 00
Pitch MG Int : 02
Pitch MG Freq : MF0
VDF MG Int : FM 15
VDF MG Freq : MF 0

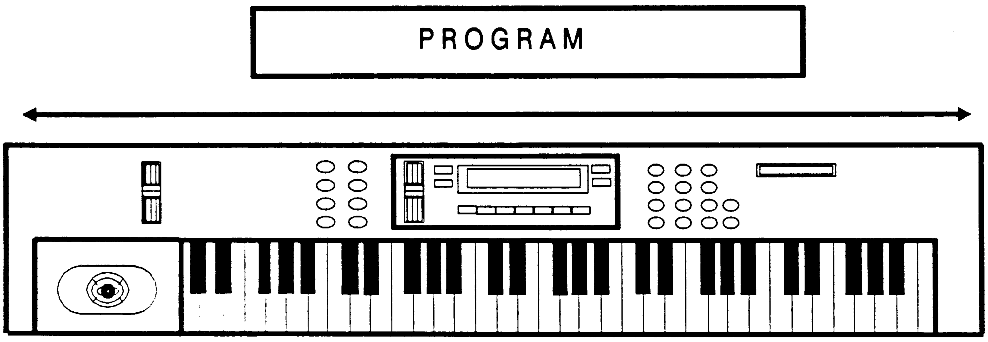
Chapter 5

Combination Mode - Overview

One of M1's most powerful tricks is its ability to combine different Programs in a variety of ways. This gives the synthesist the opportunity to recreate multi instrument ensembles, and create unique layered effects. The programs can be combined in many ways. Here's a run down of the varieties available. *Please see next page for following text and illustration.*

The Single Combination

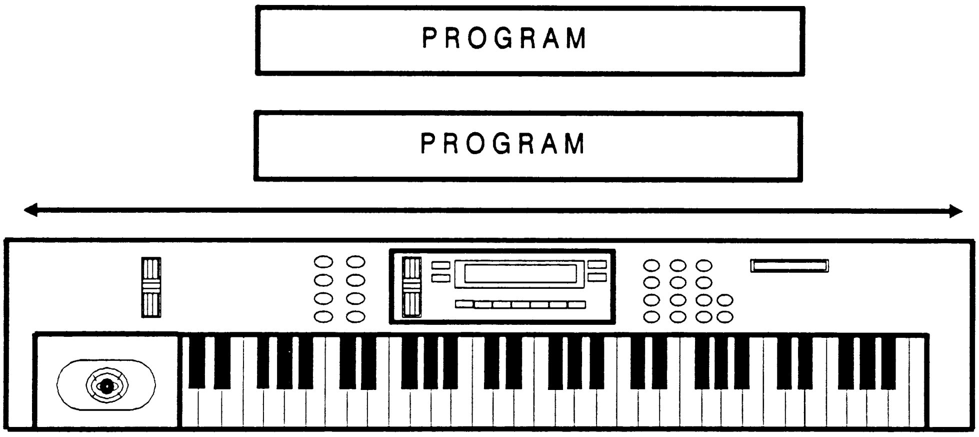
This combination uses one Program assigned across the entire keyboard from the lowest note to the highest note. Why use a Combination memory slot to function like a standard Program? It lets the player (you?!?) switch between a standard Program and a Combination with *fewer* keystrokes. This, then, is just another convenience feature designed to make your life on stage just a little simpler.



Single programs sound across the entire keyboard

The Layer Combination

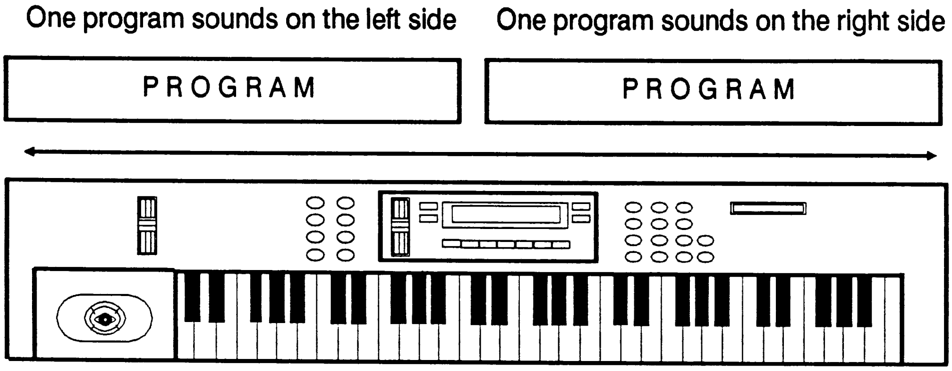
A layer combination puts two Programs across the keyboard. Two programs are played with a single keystroke.



Two programs sound across the entire keyboard

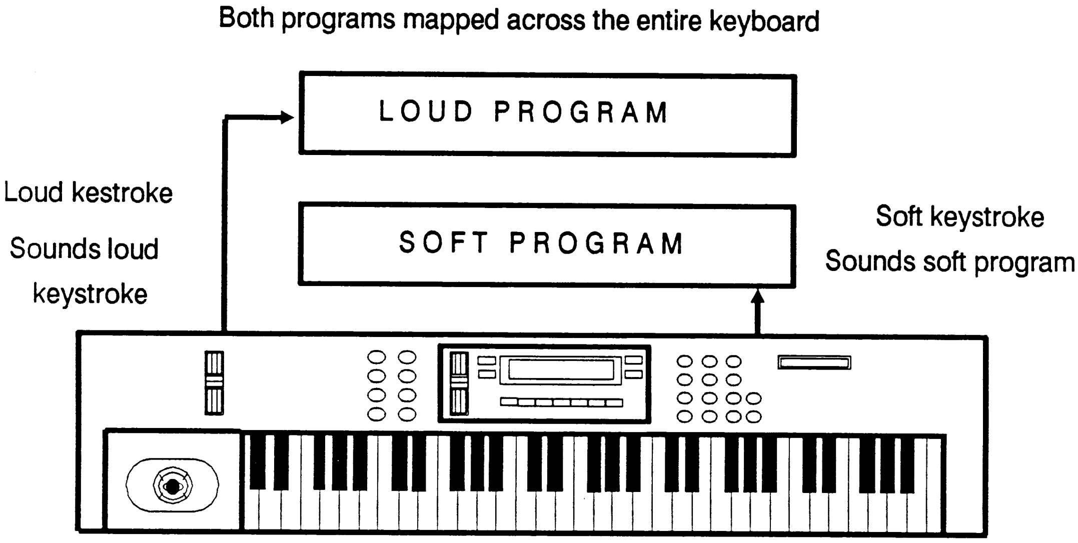
The Split Combination

Split mode puts one Program on the left side of the keyboard and another on the right side. The split point is programmable.


One program sounds on the left side
One program sounds on the right side
PROGRAM
PROGRAM

The Velocity Switch Combination

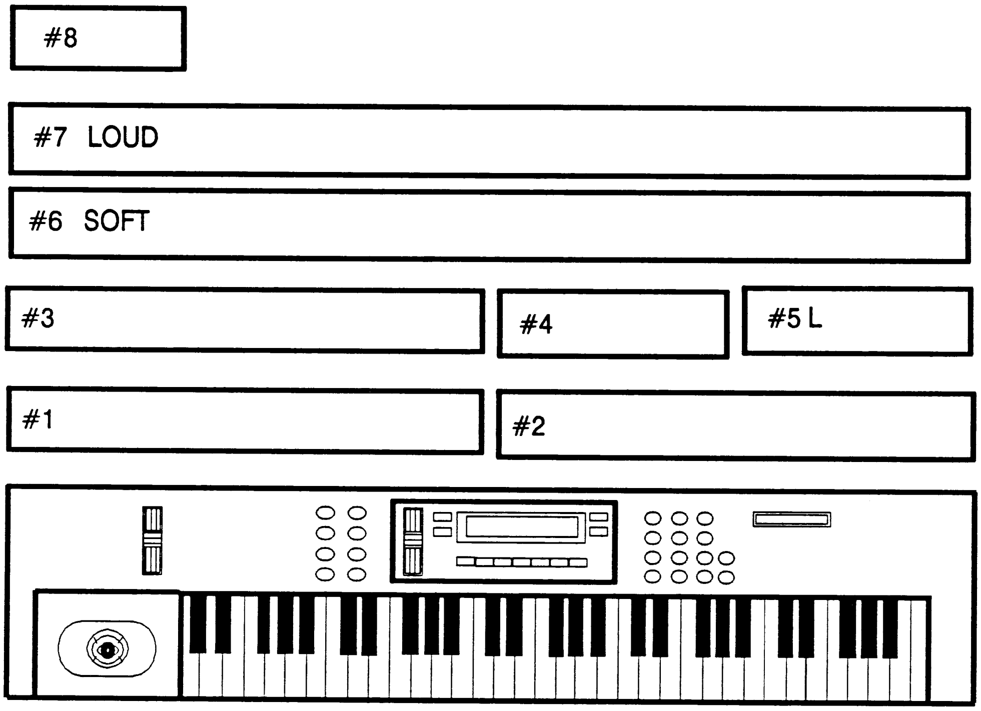
Velocity Switch is a variation of the Layer concept. Like a layer, two programs are mapped across the keyboard. But, unlike a layer, you'll only hear one program at a time. The M1 uses velocity (see Chapter 23) to switch from one program to another.


Both programs mapped across the entire keyboard
LOUD PROGRAM
Loud kestroke
Sounds loud
keystroke
SOFT PROGRAM
Soft keystroke
Sounds soft program

The Multi Combination

The Multi combination Mode is for setting up the M1 as a multitimbral slave unit for a sequencing application.

Up to eight timbres can be accessed, each having their own MIDI channel, pan settings, level etc. Very complex setups that can't be realized in the other modes can be easily acheived in Multi mode. More on this later.



	How Multi Combinations Work
#1+2 = Split	One sound on each side of the keyboard
#3,4,5 = Split	The keyboard is divided three times.
#1,3,8 = Layer	Patches sounding simultaneously.
#5,6,7 = Velocity Switch	Combination which is a variation of the Layer concept.

The payoff for the musician with no extra time available, is that this doesn't require any programming as such to get new sounds. Some editing features are available, let's learn to edit these combinations now.

Chapter 6

Two Ways to Edit Combinations

Combinations can be edited in two ways:

- From the LCD display. The LCD display is available to you when you're in Combination Mode (Play). The parameters are accessed from the Cursor keys [A-H].
- From Edit Combination Mode. While the LCD makes the most common edits available, the Edit Combination mode makes all Combination parameters available. Enter Edit Combination mode by pressing [Edit Combi] button to the left of the LCD. This procedure is described in detail in the next chapter.

Editing From the LCD Display

The M1 lets us edit (industry slang for edit is tweak) Combinations on the spot with the 8 cursor keys under the LCD display. Adjust with the value slider and the [Up/Down] keys.

The [Combination] mode provides access to two parameters. You can edit the Program and the Level for Single, Layer, Velocity Switch, and Multi Combinations. Here's an example for each Combination type.

Single Combinations

This is what the LCD looks like when a Single Combination is called up.

```
COMBI      I00      FilmScore      Program

  I23    Choir         Level = 99
```

There are no Single Combinations in memory, so we'll have to make one ourselves.

1. Call up Combination *I52 5 Strings.*

2. Press [Edit Combi] to access the Combination Type page. Using the Value Slider, pick Single. Press cursor key [G] to enter your choice.

3. Press [Combi] again and we now have a Single Combination.

4. Press cursor button [A] to change the program. All of the M1's programs are available to you, but only one at a time. Move The Value Slider to pick the program.

5. Press cursor button [D] to alter the program level. Use the Value Slider and the [Up/Down] buttons.

6. Save the Edit to memory. (See *Chapter 3* and Using the Write/Rename function earlier in this chapter.)

Layer Combinations

Here's the LCD display in Layer mode. Call up Combination *I01 Pankala.*

```
COMBI      I00FilmScore               Layer 1 Program

I23   Choir           L99   I01    Piano 16'     L99
```

1. Press [A] to change the Layer 1 program *(I10 PanMallet).* Press [Up] to change Layer 1 to E.Piano 1. Play the keyboard. Press [Up] to change Layer 1 to Trumpet. Play the keyboard again.

2. Press [D] to edit Layer 1's Level. Using the Value Slider, enter 0. While playing the keyboard, slowly bring the level up with the Value Slider. Adjust to taste with the Value Slider and the [Up/Down] buttons.

3. Press [E] to change Layer 2's program. Press [Down] to change Layer 2 to Overture. Play the keyboard.

4. Press [H] to adjust Layer 2's level with Layer 1. As Layer 2's Level increases, the sound becomes much more orchestral. Use the Value slider and the [Up/Down] buttons.

Split Combinations

The LCD displays Split Combinations like this:

```
COMBI        I00FilmScore                  Lower Program

I23   Choir                L99    I01    Piano 16'     L99
```

Call up *I39 Bass&Reed.*

1. Press [A] to change the Lower Program. This is the Program on left side of the keyboard. Press [Up] to change the Lower Program to I06 Symphonic. This change is more suitable for chordal accompaniment for the DoubleReed program.

2. Press [D] to edit the Lower Program's Level. The lower program is a little overpowering, so let's bring it back to 50 with the Value Slider and the [Up/Down] buttons.

3. Press [E] to change Upper program. Using the Value Slider and the [Up/Down] buttons, change the Upper program to I18 Flute.

4. The Lower program is still overpowering, so let's bring the Flute up some more. Press [H] to adjust the Upper Program's level with the Lower Program. Use the Value slider and the [Up/Down] buttons. Enter 99.

Velocity Switch Combinations

The LCD looks like this with a Velocity Switch combination:

```
COMBI    I00       FilmScore          LoudProgram

I01   Piano 16'         L99    I23     Choir      L99
```

There are no Velocity Switch Combinations in memory, so we'll have to make one ourselves.

1. Call up Combination *I47 Trumpet&FH.*

2. Press [Edit Combi] to access the Combination Type page. Using the Value Slider, pick Velocity Switch. Press cursor key [G] to enter your choice.

3. Press [Combi] again and we now have a Velocity Switch Combination. Play the keyboard hard, and listen to the Trumpet. While playing the keyboard soft, listen to the Flugelhorn.

4. Press [A] to change the LOUD Program. I like these 2 programs for a velocity switch, so leave the programs as is.

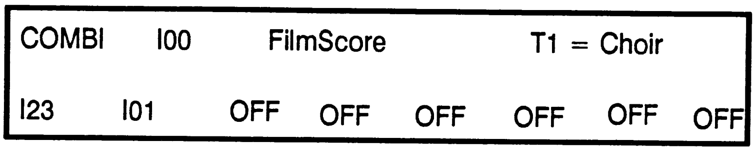
5. Press [D] to edit the Loud Program's Level. The Trumpet is too loud, so let's lower the level to 65 with the Value Slider and the [Up/Down] buttons.

6. Press [E] to change SOFT program. Again, let's leave this alone.

7. Press [H] to adjust the Soft Program's level with the Loud Program. The balance between the Loud and Soft programs are alright, so no adjustment is necessary. However, to change the level, use the Value slider and the [Up/Down] buttons.

Multi Combinations

The LCD displays a Multi combination like this:

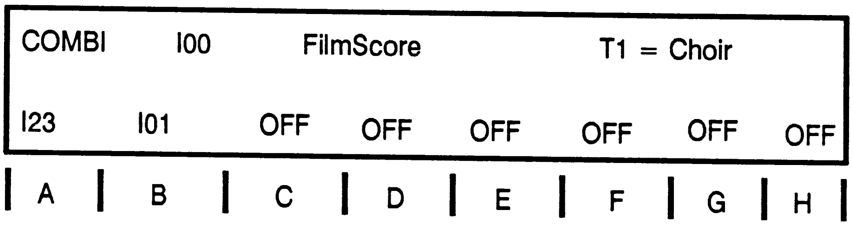


```
COMBI   I00    FilmScore        T1 = Choir
I23     I01    OFF  OFF  OFF  OFF  OFF  OFF
```

Call up *I20 Christmas.*

1. Each Program in the Combination is displayed across the LCD. Press the cursor keys under the desired Program and the LCD displays the corresponding timbre's name in the upper right hand corner. Choose between any of the 100 Programs or turn the timbre OFF using the [Up/Down] buttons or the Value Slider.

Enter *I52 TubaFlugel* for Timbre 1 (cursor button A), and *I47 Pipe Organ* for Timbre 4 (cursor button D).



```
COMBI   I00    FilmScore        T1 = Choir
I23     I01    OFF  OFF  OFF  OFF  OFF  OFF
```

2. Press [Page +] to access the second page. This page lets us set Levels of each timbre in our combination. This is like having an onboard mixer for each of our programs!

3. Adjust the timbre level by first positioning the cursor under the desired timbre with the appropriate cursor key.

Adjust the level with the value slider and the [Up/Down] keys.

Enter 69 for Timbre 1 (cursor A) and 22 for Timbre 4 (cursor D).

4. Save the edit to memory if you like.
5. To return to the first page, Press the [Page -] button.

Chapter 7

How to Make Combination Edits Permanent

While editing the Combinations, you will often create a sound you'd like to keep. Here's how to make the Edit permanent.

Using the Write/Rename Function

1. Turn the Internal Memory Protect off.

2. Edit the Combination to taste. I'll fully cover this later.

3. Press [Edit Combi], then press [#9] on the 10 key pad. The LCD tells us the Combination number, the name and that we're on the *Write/Rename* page.

4. The cursor is blinking under the current Combination number on the lower right of the display. Using the value slider and the [Up/Down] buttons, enter the memory number to store your new combination.

NOTE: The combination currently at that number is permanently erased after using the Write/Rename function.

5. Press [F] or [G] cursor buttons to start. The LCD reads, *Are You Sure?*

6. Press cursor key [G] (Yes) to execute, or press cursor key [H] (No) to cancel.

Your combination is now saved to internal memory.

The Compare Function

While experimenting with the parameters of a combination, it's often very useful to refer back to the original for reference. Do this by using the Compare button.

Compare switches alternately between your edited version and the original version in memory. You can switch back and forth as often as you like. Please note, that when the Compare function is engaged, the LCD returns to the first editing page.

Chapter 8

Creating Combinations - Level 1

In the last chapter we learned how to do basic edits from the LCD display. We also described all the Combination modes in detail. This chapter goes deeper into the inner workings of the Combinations.

Each of the Combination modes has its own unique capabilities and features. Because of this, the Edit menus are different for each type of Combination. Pay close attention to the which mode leads to which page. Use the illustrations as guide posts. If you find you're not with the illustration, start at the beginning and carefully step your way back.

This section details the Editing pages *only.* The effects are explained seperately in their own chapter. All the effects menus are the same for all the Combination types.

Edit Combination Mode

You can create a combination from scratch in this mode. Besides the 100 Programs available from the internal memory you can access up to 100 more when using a data card in the Program/Sequencer slot on the front panel. Be certain to insert the card before calling up a combination that uses a Program from the data card.

Make a Single Combination

A Single Combination is exactly the same as a Program. The *only* difference is that it resides in the same memory block as the other Combinations.

The advantage is that it doesn't take as many keystrokes to get to the Single Combination from another Combination as it does to get to a Program from a Combination. This saves time when you're in a hurry - in live performance situations, for example.

1. Press [Edit Combi] to enter the Edit Combination mode.

2. The LCD displays the COMBINATION TYPE page. Using the Values Slider and the [Up/Down] buttons, enter SINGLE. Press the [G] or [H] cursor buttons under [SELECT] to write to memory.

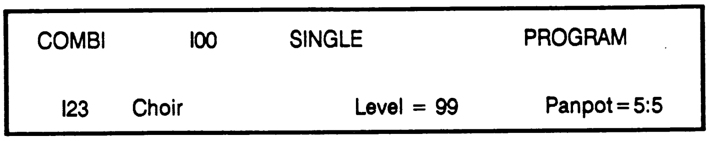
NOTE: These edits are not permanent until the WRITE/RENAME function is used. See the last chapter.

3. Press [Page +]. This is the only editing page for Single Combinations. It displays three parameters.

```
COMBI     100     COMBINATION TYPE

                  ( SINGLE )          [SELECT]
```

- **Program** = Determines which program is stored in this memory slot. Any of the 100 Internal Memory programs can be used. In addition, a Combination can use programs on RAM cards. Be sure the card is in the slot when calling up the Combination.
- **Level** = Determines the Program's Level.
- **Panpot** = Determines which Effect Input the Program is assigned to (A,B,C,or D). Which of the M1's outputs it ultimately reaches are determined by the Effects settings.



```
COMBI        I00       SINGLE                PROGRAM

  I23      Choir              Level = 99       Panpot=5:5
```

4. The cursor is located under the Program parameter (pressing [A] puts the cursor back if it gets moved somewhere else). Using the Values Slider and the [Up/Down] buttons, scroll through the Programs available. Notice the name changes as well. Every time the name changes, the keyboard can then sound the displayed program.

5. Press [E] to access the Level parameter. Adjust the volume with the data entry controls (Value slider and [Up/Down] buttons). 99 is the Loudest and 00 is the Soft side.

6. Press [F,G,H] cursor buttons to access the Panpot parameter. This is panning the Combination between the four Effect Inputs. The effect inputs are connected to the M1 Outputs on the back.

The parameter values are:

- **A** = A Input of the effects section. The A input is routed hard left, Output 1 on the back of the M1.
- **A/B Ratio** = Ratio of A to B equal to 10. A reading of 5:5 means equal send to both inputs. The left number is Input A, and the right number is Input B.
- **B** = B Input. The B input is routed hard right, to Output 2 on the back of the M1.
- **C** = C Input
- **C + D** = C and D Input
- **D** = D Input

Inputs C and D can be assigned to Outputs 1 and 2 in stereo

7. Adjust the value with the data entry controls (Value slider and [Up/Down] buttons).

8. Save to memory. (See chapter 3.)

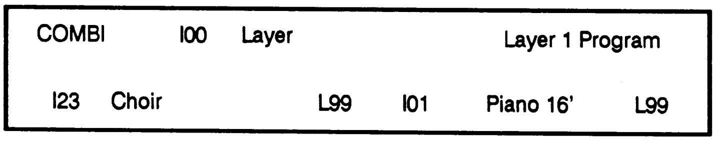
Make a Layer Combination

1. Press [Edit Combi] to enter the Edit Combination mode.

2. The LCD displays the COMBINATION TYPE page. Using the Values Slider and the [Up/Down] buttons, enter LAYER. Press the [G] or [H] cursor buttons under [SELECT] to write to memory.

NOTE: These edits are not permanent until the WRITE/RENAME function is used. See the last chapter.

3. Press [Page +]. This is the first of two editing pages for Layer Combinations. The first page displays two parameters. This is program select and level for Layer 1 and Layer 2.



```
COMBI      I00  Layer               Layer 1 Program
 I23  Choir            L99   I01    Piano 16'     L99
```

4. The cursor is located under the Program parameter for Layer 1. (Again, pressing [A] puts the cursor back if it gets moved). Using the Value Slider and the [Up/Down] buttons, scroll through the Programs available. Notice the name changes as well.

Enter *I08 Pan Flute* for Layer 1.

5. Press [D] to access Layer 1's Level parameter. Adjust the volume with the data entry controls (Value slider and [Up/Down] buttons).

This timbre is soft, so enter 99 for Layer 1's level.

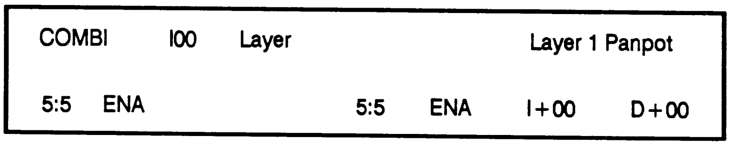
6. Pressing [E] accesses program select for Layer 2. Using the Values Slider and the [Up/Down] buttons, scroll through the Programs available.

In chapter 4, we talked about great sounds that sound great together, and one of these was a flute/guitar combination. Enter *I24 12-String* for Layer 2.

7. Press [H] to access Layer 2's Level parameter. Adjust the volume with the data entry controls (Value slider and [Up/Down] buttons).

We have to bring back the guitar so we can hear the flute clearly. Enter 78 for the level.

8. Press [Page +] to access the Layer's second editing page. The parameters on this page are Panpot, Damper, Interval, and Detune.



```
COMBI    I00   Layer                   Layer 1 Panpot
5:5  ENA                 5:5   ENA    I+00     D+00
```

- The Panpot parameter pans each layer between the four Effects Inputs. Both Layer 1 and Layer 2 are seperately panned. For more details about the parameter, see the last section on Single Combinations.
- *Damper* is short for Damper pedal. This pedal sustains the notes played on the keyboard. The Damper parameter has only two values: on and off. When the Damper effect is on, the display reads *ENA* (ENAble). If the Damper effect is off, the display reads *DIS* (DISable). Again, each Layer has its own Damper setting.
- Interval transposes Layer 2 up or down one octave in half step increments.
- Detune adjusts the pitch of Layer 2 within one half step. This is commonly used for chorusing type effects which fatten up the sound.

9. Press [A] to put the cursor to the Layer 1 Panpot parameter. Adjust as desired. See Making a Single Combination for details about the choices. Press [E] to adjust Layer 2 Panpot.

For the lush, big sound,enter 5:5 for the panpot parameters. For seperation, pan towards A to move the program to the left, and toward B to move the program to the right.

10. Press [B] to edit the Layer 1 Damper parameter. *ENA* turns the Damper pedal ON (Press [Up]), and *DIS* turns the Damper pedal OFF (Press [Down]). Press [F] to Enable or Disable the Damper pedal for Layer 2.

This parameter is useful only if you have the optional damper pedal and it is plugged in in the back. I suggest that even if you *don't* have a damper pedal to *always* set this parameter to ENA. This way you can experiment with the pedal later by just plugging it in.

11. Press [G] and the display in the upper right corner reads *Interval.* This effects Layer 2 ONLY. The range is one octave up or down in half step increments.

Common settings include:

- -12 = transposes Layer 2 down one octave
- +07 = transposes Layer 2 up one fifth
- +12 = transposes Layer 2 up one octave

Enter +12 for our Flute/Guitar layer.

12. Press [H] to access the Detune parameter. Again, this affects Layer 2 ONLY. Raising or lowering Layer 2 results in chorusing effects and out-of-tune effects as well. Adjust using the data entry controllers.

Enter +10 for the Detune parameter.

13. Save to memory. (See chapter 3.)

Make a Split Combination

1. Press [Edit Combi] to enter the Edit Combination mode.

2. The LCD displays the COMBINATION TYPE page. Using the Values Slider and the [Up/Down] buttons, enter SPLIT. Press the [G] or [H] cursor buttons under [SELECT] to write to memory.

NOTE: Make these edits permanent by utilizing the WRITE/RENAME function. See the last chapter.

3. Press [Page +]. This is the first of two editing pages for Split Combinations. The first page displays two parameters. This is Program Select and Split Point for the Lower Program and the Upper Program.

```
COMBI   I00   KEY SPLIT                  Lower Program

  I23   Choir           SP=C4          I01   Piano 16'
```

4. The cursor is located under the Program parameter (Again, pressing [A] puts the cursor back if it gets moved). Using the Value Slider and the [Up/Down] buttons, scroll through the Programs available. Notice the name changes as well.

Enter *I00 Universe* for the Lower program.

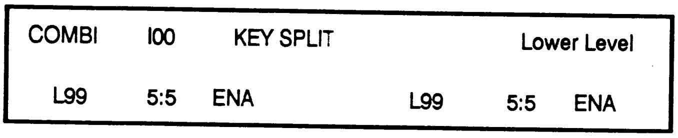
5. Press [D or E] to change the Split point. Enter the parameter by using the data entry controls. The letter is the note value, and the number is the octave. The lowest note on the M1 is C2.

Enter *C5* for our Split point.

6. Press [F, G, or H] to enter the Upper Program of the Split. Use the data entry controls.

Enter *I72 Brass 2* for the Upper program.

7. Press [Page +] to access the Split's second editing page. The parameters on this page are Level, Panpot, and Damper for both the Lower and Upper Programs.



```
COMBI    I00      KEY SPLIT                 Lower Level

L99      5:5    ENA              L99      5:5     ENA
```

8. Set the parameters on this page as follows. Set Lower level (cursor A) to 99. Leave the Panpot setting (cursor B) to 5:5, and leave the Damper pedal setting to ENA.

9. Adjust the Upper level to 88, leave the Panpot at 5:5, and set the Damper pedal to ENA.

10. Save the combination to memory. (See Chapter 3.)

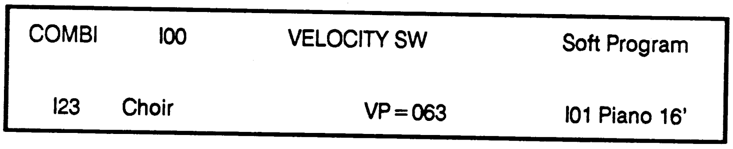
Make a Velocity Switch Combination

1. Press [Edit Combi] to enter the Edit Combination mode.

2. The LCD displays the COMBINATION TYPE page. Using the Values Slider and the [Up/Down] buttons, enter VEL.SW (Velocity Switch, of course). Press the [G] or [H] cursor buttons under [SELECT] to write to memory.

NOTE: Make these edits permanent by utilizing the WRITE/RENAME function. See the last chapter.

3. Press [Page +]. This is the first of two editing pages for Velocity Switch Combinations. The first page displays two parameters. This is program select and velocity switch point for the Loud Program and the Soft Program.



```
COMBI      I00          VELOCITY SW            Soft Program

  I23     Choir                VP=063          I01 Piano 16'
```

4. The cursor is located under the Soft Program parameter (Pressing [A] puts the cursor to the first Program select if you need to get it back). Using the Value Slider and the [Up/Down] buttons, scroll through the Programs available. The name changes on the LCD as you scroll through them.

Enter *I87 Soft Horns* for the Soft program.

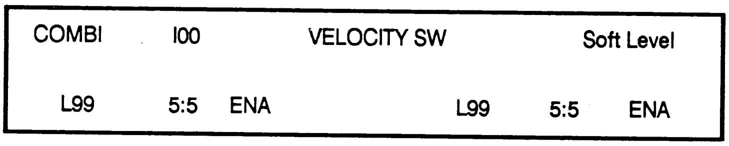
5. Press [D or E] to change the Velocity Switch point. Enter the parameter by using the data entry controls. The higher the number the harder the keys must be struck to hear the Loud program.

I like to start with the Velocity Switch point at 95. We can always change it later.

6. Press [F, G, or H] to enter the Loud Program of the Switch. Use the data entry controls.

Enter I72 Brass 2. This gives the Brass combination a wide dynamic range that is similar to the real thing.

7. Press [Page +] to access the Velocity Switch's second editing page. The parameters on this page are Level, Panpot, and Damper for both the Loud and Soft Programs.



```
COMBI    I00          VELOCITY SW          Soft Level
  L99    5:5   ENA                 L99   5:5   ENA
```

8. This page is exactly the same as the second page of the Split combination. Refer back for the details.

9. Save the combination to memory. (See Chapter 3)

Chapter 9

Make a Multi Combination - Level 2

The Multi combination is the most powerful of the Combinations. All the features of the other Combinations are featured in a Multi Combination to use as you wish. Some new features too. There's a total of fourteen editing pages for a Multi combination. Luckily there's only one parameter per page.

Pages can be accessed in two ways. We've been doing one all along, and that is by using the [Page +] and [Page -] buttons. The second method involves the 10 key pad. Each number on the pad accesses one of the pages. These are the more frequently used pages, and it saves time instead of scrolling through one by one. If a page is assigned a number, I'll mention that in the description. We'll go through the pages one at a time and show how the Multi Combination is constructed.

1. Press [Edit Combi] to enter the Edit Combination mode.

2. The LCD displays the COMBINATION TYPE page. Using the Values Slider and the [Up/Down] buttons, enter Multi. Press the [G] or [H] cursor buttons under [SELECT] to write to memory.

NOTE: Make these edits permanent by utilizing the WRITE/RENAME function. See the last chapter.

Program Select Page

Located at [#1] on the 10 key pad. This is the first of fourteen editing pages for Multi Combinations. The first page is program select for each of the eight programs available in this mode. Note that the eight programs are displayed across the bottom line of the LCD.

The name of the program being edited is displayed in the upper right hand corner. This changes as the cursor is moved from one timbre to another with the 8 cursor buttons. This is the format of all the edit pages.

Programs are called *Timbres* in this mode. There is *no* difference between the two.

```
COMBI    I00      PROGRAM SELECT         T1 =Choir

  I23   I01    OFF    OFF    OFF    OFF    OFF    OFF
```

MIDI Channel Select Page

This is [#2] on the 10 key pad. Each timbre can have its own MIDI channel. This lets the sequencer or some other outside device control some of the timbres and the M1 keyboard control others. The M1 MIDI channel is set in the [Global] mode. When a timbre in Multi mode is set to the same channel, a [G] follows the MIDI channel number in the display.

```
COMBI    I00      MIDI CH                T1 =Choir

  1G     1G     1G     1G     1G     1G     1G     1G
```

Key Window Top Page

[#3] on the 10 key pad brings us to the Key Window Top page. This parameter is borrowed from the Split combination concept. Very simply, this page sets the top note of each timbre's range. The parameters go from C#1 to G9.

```
COMBI   I00    KEY   WINDOW   TOP        T1 =Coir

 G9    G9    G9    G9    G9    G9    G9    G9
```

Key Window Bottom Page

Press [#3] on the 10 key pad and then [Up] to access the Key Window Bottom page. This page sets the bottom note of each timbre's range. The parameters go from C#1 to G9. Be certain to set the Key Window Bottom timbre lower than the corresponding Top parameter or the timbre cannot sound.

The Key Window Top and Key Window Bottom interact to map a timbre to the M1 keyboard in any way. The timbre sounds when a key is struck between its top and bottom keys. Each timbre is independently set, so overlapping or layering of timbres is possible in different combinations across the keyboard.

```
COMBI    I00    K.WINDOW   BOTTOM        T1 =Choir

C-1    C-1    C-1    C-1    C-1    C-1    C-1   C-1
```

Velocity Window Top Page

Access this page by pressing [#3] on the 10 key pad. Pressing [Page +] twice brings us to the Velocity Window Top page. The number sets the highest velocity level that can still sound the timbre. A velocity level that is greater than the Velocity Top parameter does not sound. The higher the Velocity Top number the harder the key can be struck and still sound. Moral:Set lower numbers for timbres that are for Soft passages and a higher number for the other louder passages.

```
COMBI   I00   VEL.  WINDOW   TOP          T1 =Choir
 062    127    127    127     127    127    127    127
```

Velocity Window Bottom Page

Access this page by pressing [#4] on the 10 key pad. Pressing [Page -] once brings us to the Velocity Window Bottom page. As its title suggests, this page is the opposite of the previous page, Velocity Window Top.
This number sets the lowest velocity level that can still sound the timbre. A velocity level that is less than the Velocity Bottom parameter does not sound. The lower the Velocity Bottom number the softer the key can be struck and still sound. Once again the Moral: Set higher numbers for timbres that are for Loud passages exclusively and a lower number for the others.

```
COMBI     I00     V. WINDOW BOTTOM              T1 =Choir
  001     063     001    001    001    001    001    001
```

Output Level Page

[#4] on the 10 key pad accesses the Output Level page.

NOTE: If the M1 doesn't use a Timbre in a Combination, the output value is automatically set to 99. If you haven't given the M1 instructions to set a parameter to a specific value, the M1 selects a value as a starting point automatically. That's called a default value.

Each Timbre is displayed over one of the eight cursor buttons. Press the cursor button under the desired Timbre and adjust using the [Up/Down] buttons and the Value Slider.

```
COMBI    I00     OUTPUT  LEVEL          T1 =Choir

  99      99     99     99     99     99     99     99
```

Transpose Page

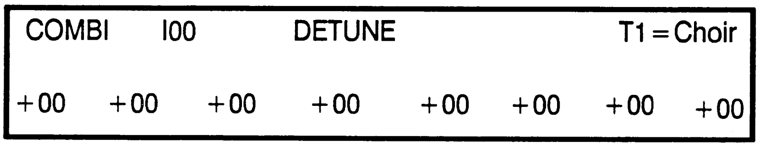
[#5] on the 10 key pad is the Transpose page. The range of this parameter is one octave up and one octave down. Each increment is one half step. This parameter is independent, making seperate transpositon of identical programs on different timbres possible. For example, if Program I27 Strings is set for Timbres 1 and 3, Timbre 1 can be set to concert pitch and Timbre 3 set up one octave. We'd hear both string sounds, one octave apart.

```
COMBI    I00     TRANSPOSE                   T1 =Choir

+00    +00    +00    +00    +00    +00    +00    +00
```

Detune Page

Press [#5] on the 10 key pad. Then press [Page +] to get to the Detune page. This alters the pitch within one half step. This is very useful for fattening up a combination.

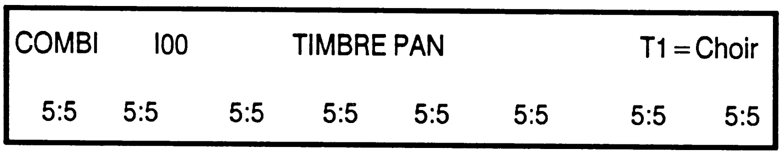


```
COMBI    I00      DETUNE                T1 =Choir
+00   +00   +00   +00   +00   +00   +00   +00
```

Timbre Pan Page

[#6] on the 10 key pad is tbe Timbre Pan page. Each timbre is displayed across the LCD display. Access each timbre with the cursor key buttons. This page pans the Timbres between the four Effect Inputs.

This page functions in the exact same manner as the Panpot parameter in the earlier described combinations. Adjust the value with the data entry controls (Value slider and [Up/Down] buttons).



```
COMBI    I00      TIMBRE PAN            T1 =Choir
 5:5   5:5   5:5   5:5   5:5   5:5   5:5   5:5
```

MIDI Program Change Page

[#7] on the 10 key pad is the MIDI program change page. The parameter values are *ENA* (ON) and *DIS* (OFF).

When a timbre is set to ENA, the timbre responds to the MIDI program change command. That is, the timbre can be changed through MIDI. If the timbre is set to DIS, the timbre ignores any MIDI program changes and can only be set manually.

```
COMBI   I00     MIDI   PROGRAM     CHG  T1=Choir

 ENA  ENA  ENA  ENA  ENA  ENA  ENA  ENA
```

Damper Page

Press [Page +] button after [#7] on the 10 key pad. The Damper page is another On/Off page. Set the parameter to ENA to let the Damper pedal have its effect. To turn the pedal off, set the parameter to DIS. This parameter is set seperately for each Timbre.

```
COMBI    I00        DAMPER            T1=Choir

 ENA  ENA  ENA  ENA  ENA  ENA  ENA  ENA
```

Aftertouch Page

Access the Aftertouch page by pressing [#7] on the 10 key pad and the [Page +] button twice after that. Each timbre can be set to recieve or ignore Aftertouch commands. To receive, set the Timbre to ENA. To ignore, set the Timbre to DIS.

```
COMBI      I00        AFTER TOUCH          T1 = Choir

ENA  ENA   ENA   ENA   ENA   ENA   ENA   ENA
```

Control Change Page

Press [#8] on the 10 key pad and [Page -] once to get to the Control Change page. Examples of control change commands are joystick, MIDI volume, foot controller etc. The Control change page is another ENA/DIS type. Enter ENA for the timbres to respond to Control Changes, and DIS for the timbres to ignore them.

```
COMBI    I00    CONTROL    CHANGE    T1 = Choir

ENA  ENA   ENA   ENA   ENA   ENA   ENA   ENA
```

Chapter 10

Editing From the LCD Display

Many finished sounds don't start from scratch. Very often it's only a matter of changing a couple of things about a program to make it work. This process is called Tweaking.

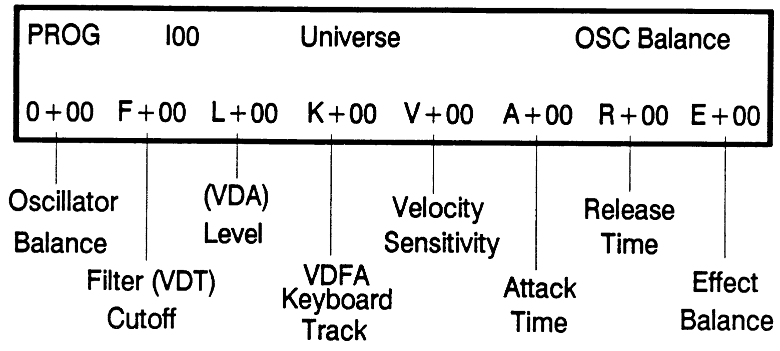
Tweaking can be likened to fine tuning an automobile, or doodling with a painting until it's just right, or adding the final touches to any project.

How to Edit From the LCD Display

The M1 makes it easy to experiment with the sound creating part of the creative process. For the live performance *,this just occurred to me* type edits, the M1 provides the LCD edits. All parameter ranges are a +/- 10.

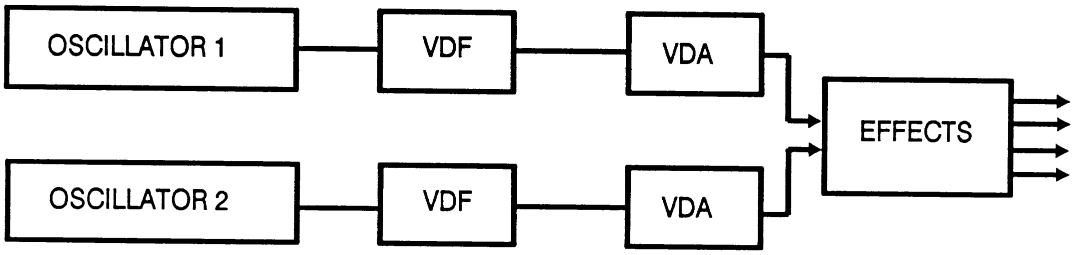
For examples of these edits, see *12 Studio Tweaking Procedures* later in this chapter.

Sample M1 Edit Display Legend


PROG
100
Universe
OSC Balance
0+00
F+00
L+00
K+00
V+00
A+00
R+00
E+00
Oscillator Balance
Filter (VDT) Cutoff
(VDA) Level
VDFA Keyboard Track
Velocity Sensitivity
Attack Time
Release Time
Effect Balance

OSC Balance

This adjusts the balance between the M1's two Oscillators when a Program is in Double mode. In Double mode, two oscillators are utilized in one Program.


OSCILLATOR 1
VDF
VDA
OSCILLATOR 2
VDF
VDA
EFFECTS

Program structure in double mode

Positive values makes Oscillator 1 louder, while Oscillator 2 becomes softer. Negative values (-1 to -10) increases Oscillator 2's volume, while making Oscillator 1 softer.

Call up *I10 PanMallet*. I'll use this program to demonstrate all the cursor keys.

1. Press [A]. On the top right corner the LCD reads OSC Balance - check.

2. Enter +10 with the Value Slider by pushing it to the top. The keyboard now sounds the *Pan Flute* multisound only.

3. Enter -10 with the Value Slider. The Keyboard now sounds the other multisound, *Karimba.*

4. Adjust this balance as needed.

In Single mode, positive values increases the volume of the Program slightly, while negative values decrease the value. Adjusting the OSC Balance in Single mode doesn't result in any timbral change.

VDF Cutoff

Variable Dynamic Filter Cutoff adjusts the Program's degree of brightness and darkness. Adjust the parameter using the value slider and the [Up/Down] buttons.

1. Press cursor [B] to access the VDF Cutoff edit. Check the LCD in the top right corner.

2. Positive values make the Program brighter. Enter +10 with the Value Slider and listen to the sound change.

3. Negative values give the Program a softer, darker quality. Use the Value Slider to enter -10 and the sound is darker sounding.

VDA Level

Variable Dynamic Amplifier level is a volume adjustment.

1. Press [C] to access the VDA Level edit.

2. Increase the level by entering positive values. Enter the volume needed.

3. If the Program is too loud, enter negative values.

VDFA KBD Track

Variable Dynamic Filter/Amplifier Keyboard Track determines how the keyboard controls the bright/dark qualities and the loud/soft qualities of the sound at the top and bottom of the keyboard.

1. Press [D] to adjust the keyboard tracking.

2. Positive values make the Program darker at the top of the keyboard and brighter as you go down in pitch. Enter +10.Listen to the keyboard in the higher registers and the lower registers.

3. Negative values provide the opposite effect.

4. This parameter affects the programs volume too. A positive value in this section makes the Program softer at the higher pitches and louder towards the bottom end of the keyboard. With the value at +10, listen to the keyboard at the higher and lower registers. Hear how the sound is as we described it.

5. Again, negative values provide the opposite effect.Enter -10 and compare. The higher notes are longer and as the pitches become lower the notes become shorter.

Vel. Sens

Velocity Sensitivity parameter determines how much of the Program's volume is controlled by your playing technique.

1. Press [E] cursor button to engage the Velocity Sensitivity edit.

2. Positive values extend your control - usually by letting you play softer and softer, providing more dynamic range. Enter +10 and play softly. The program still sounds right?

3. Negative values take the Velocity Sensitivity out - the maximum value of -10 eliminates Velocity completely. Enter -10 and play softly. Then play hard. There's no difference in the sound.

Attack Time

In Double mode, a Program has four Attack parameters: two in the Filter, and two in the Amplifier. The front LCD gives control over all four with one control.

1. Press [F] to access the Attack edit. Positive values slow the attack, so enter + 10. The program takes longer to reach its peak loudness when the keyboard is played.

2. Negative values speed the Attack up, so enter -10. The program is heard instantaneously when the keys are struck.

Release Time

All four Release parameters are controlled from this parameter.

1. Press [G] to access the Release edit.

2. Positive values result in a longer release time when you lift off the keyboard. Enter + 10. The program rings out for a long time after your hand lifts off the keyboard.

3. Negative values cut the release off so that the program stops as soon as you lift your hand off the keys. Enter -10 and play the keyboard to hear this.

Effect Balance

This edit control adjusts between the *effected* signal and the *uneffected or dry* signal.

1. Press [H] to access the Effect edit control.

2. Make the Effect louder by entering a positive value. Only the effect output is heard now.

3. Take the Effect out by entering a negative value. No effect is heard at all.

Making Tweaks Permanent from the LCD and the Edit Program Mode

Writing an Edit into memory saves time instead of entering an edit everytime you call up a Program.

1. Turn the Memory Protect OFF. See Chapter 3.

2. Press [Edit Prog] button to enter the Edit Program mode.

3. Press [#9] on the 10 key pad to access the Write/Rename function.

4. Use the Value Slider and the [Up/Down] buttons to select a memory slot for the Edited Program. Any data currently in that particular location is erased permanently.

5. Press cursor [F] under [WRITE] button. The LCD reads *Are You Sure?*

6. Press [G] (Yes) to execute and [H] (No) to cancel the Write function.

Chapter 11

12 Studio Tweaking Procedures

These are some fo the most common edits requested by Producers and engineers in studio situations.

1. Sound Too Bright/Too Dull

1. This can be fixed in the [Prog] mode.

2. Press [B] to adjust the VDF cutoff point. See Edit from the LCD in Chapter 10 for a detailed explanation of the VDF.

3. Adjust with the Value Slider and the [Up/Down] buttons. Positive numbers (+ 1 to + 10) make the program brighter, while negative numbers (-1 to -10) make the program darker or muted.

4. Save to your edit to memory.

2. Too Loud Compared to the Others

1. This can be fixed in the [Prog] mode.

2. Press [C] to adjust the VDA level. See Edit from the LCD in Chapter 10 for a detailed explanation of the VDA.

3. Adjust with the Value Slider and the [Up/Down] buttons. Positive numbers (+1 to +10) make the program louder, while negative numbers (-1 to -10) make the program softer.

4. Save to your edit to memory.

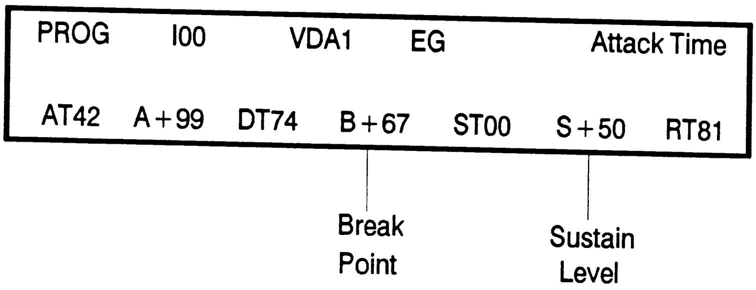
3. Sound Doesn't Sustain

1. Press [Edit Prog]. The LCD displays the OSC BASIC page. Check to see if the program is a *Single* or a *Double* program.

Let's do a Single Program first. Call up *I04 Guitar 1.*

2. If the Program is a Single program, press [#5] on the 10 key pad. This accesses the VDA1 EG page.

3. Press cursor [D] to adjust the Break Point level. Enter a value that is greater than the Sustain level (cursor button [F]). See the figure below.



```
PROG    I00    VDA1   EG          Attack Time
AT42  A+99  DT74  B+67  ST00  S+50  RT81
```

4. Play the keyboard. The program sustains while the keys are *held down.* Adjust the level upwards until the sound sustains properly.

5. If the Break Point level is +99, and the Program still doesn't sustain enough, press cursor key [F] to adjust the Sustain level.

6. Play the keyboard. Adjust the level upwards until the sound sustains properly.

7. Save to your edit to memory.

Next is a Double program.

Call up *I24 12-String*.

8. Press the [Edit Prog] button. Then press [#4] on the 10 key pad. This accesses the VDA1 EG page.

9. Press cursor [D] to adjust the Break Point level. Enter a value that is greater than the Sustain level (cursor button [F]).

10. Play the keyboard. Adjust the level upwards until the sound sustains properly.

11. If the Break Point level is +99, and the Program still doesn't sustain enough, press cursor key [F] to adjust the Sustain level.

12. Play the keyboard. Adjust the level upwards until the sound sustains properly.

At this point, one of the two Oscillators is sustaining in the desired way.

13. Press [#5] on the 10 key pad. This accesses the VDA2 EG page.

14. Press cursor [D] to adjust the Break Point level. Enter a value that is greater than the Sustain level.

15. Play the keyboard. Adjust the level upwards until the sound sustains properly.

16. If the Break Point level is +99, and the Program still doesn't sustain enough, press cursor key [F] to adjust the Sustain level.

17. Play the keyboard. Adjust the level upwards until the sound sustains properly.

18. Save to your edit to memory.

4. Wrong Range

Call up *I62 Tenor Sax.*

1. Press [Edit Prog], then press [Page +]. This is the OSC1 page.

2. Press cursor [E] to access the Octave setting.

3. Adjust with the Value Slider and the [Up/Down] buttons.

The range is set as follows:

- 4' is the highest range.
- 8' is the middle range.
- 16' is the lowest range.

The Sax is set at 16'. Set the parameter to 8' and the keyboard is transposed up one octave. At 4', the keyboard is transposed up two octaves. Use the [Compare] button to hear the difference.

4. For Double Programs, press [Page +] again. This is the OSC2 page.

5. Press cursor [E] to access the Octave setting.

6. Adjust with the Value Slider and the [Up/Down] buttons.

7. Save your edit to memory.

5. Attack Too Harsh

1. This can be fixed in the [Prog] mode.

2. Press [F] to adjust the Attack level. See Edit from the LCD in Chapter 10 for a detailed explanation of the Attack parameter.

3. Adjust with the Value Slider and the [Up/Down] buttons. Enter positive values to ease up the Attack.

4. Save your edit to memory.

6. Rings Out Too Quick/Too long

1. This can be fixed in the [Prog] mode.

2. Press [G] to adjust the Release level. See Edit from the LCD in Chapter 10 for a detailed explanation of the Release parameter.

3. Adjust with the Value Slider and the [Up/Down] buttons. Enter positive values if the Program rings out too quick, and negative values if the Program rings out too long.

4. Save your edit to memory.

7. Too Much/Not Enough Vibrato

Call up *I18 Flute.*

1. Press [Edit Prog], then press [#6] on the 10 key pad. This is the Pitch MG page. MG stands for Modulation Generator. More fancy words meaning that it's responsible for changing something, in this case, Pitch.

2. Press [E] to access the Intensity parameter.

3. Adjust with the Value Slider and the [Up/Down] buttons. Bring the value down if there's too much vibrato, and raise the value if there's not enough.

For our Flute program, enter 7.

4. Save your edit to memory.

8. Joystick Vibrato

Call up I32 *DoubleReed.*

1. Press [Edit Prog]. Press [#7] on the 10 key pad, then press [Page +]. This is the Joystick page.

2. Press cursor [D] to access the Pitch Modulation Generator (MG) Int setting.
3. Adjust with the Value Slider and the [Up/Down] buttons.

For our Double Reed program, enter 5.

4. To give the Joystick greater control, raise the value. If the effect is too much, lower the value.

5. Save your edit to memory.

9. Aftertouch Vibrato

Call up *I33 Bottles.*

1. Press [Edit Prog], then press [#7] on the 10 key pad. This is the Aftertouch page.

2. Press cursor [B] to access the Pitch Modulation Generator (MG) setting.

3. Adjust with the Value Slider and the [Up/Down] buttons.

The appropriate value depends on your playing style. Enter + 08 to start.

4. To intensify the effect from Aftertouch, raise the value. If the effect is too much, lower the value.

5. Save your edit to memory.

10. Attack Too Slow

1. This can be fixed in the [Prog] mode.

2. Press [F] to adjust the Attack level. See Edit from the LCD in Chapter 10 for a detailed explanation of the Attack parameter.

3. Adjust with the Value Slider and the [Up/Down] buttons. Enter negative values to speed up the Attack.

4. Save your edit to memory.

11. Joystick Pitch Bend

Call up *I45 Tubular.*

1. Press [Edit Prog]. Press [#7] on the 10 key pad, then press [Page +]. This is the Joystick page.

2. The cursor is already set to access the Pitch Bend setting.

3. Adjust with the Value Slider and the [Up/Down] buttons.

Tubular Bells can't bend pitch. The correct value should be +00. This defeats the joystick, so that the pitch can't be changed.

4. The pitch bend is adjustable in half step increments.

   - Positive values result in an upward pitch bend when the joystick is moved to the right, and a downward pitch bend when the joystick is moved to the left.
   - Negative values give opposite results. That is a downward pitch bend when the joystick is moved to the right, and an upward pitch bend when the joystick is moved to the left.

Enter -2. As the joystick is moved to the right, the pitch goes *down* a half step and *up* a half step when moved to the left.

5. Save your edit to memory.

12. Too Much/Too little Effect

1. This can be fixed in the [Prog] mode.

2. Press [H] to adjust the Effect level. See Edit from the LCD in Chapter 10 for a detailed explanation of the Effect parameter.

3. Adjust with the Value Slider and the [Up/Down] buttons. Enter positive values to bring up the Effect, and negative values to bring the Effect back.

4. Save your edit to memory.

Chapter 12

Creating New Sounds By Editing Existing Programs

These tweaking ideas can have a radical effect on the program's sound. The LCD parameters are the basic parameters for a sound, so many sounds can be started from any one program.

Making Variations on the Same Sound

Instruments, like colors, come in many diferent shades. All of them are different, but are easily recognized as members of a larger family of colors.

Think of the many guitar timbres you've heard. Even limiting yourself to just acoustic or electric guitars won't diminish this great number of different sounds. There are electric hollow body guitars, solid body guitars, single pickup, two pickups, humbucking pickups, and we haven't even discussed amps yet.

Now let's create some different shades (sounds) of programs that are already in the M1.

Call up *I04 Guitar 1*. Playing broken arpeggio patterns with this sound mimics a steel string guitar. From the LCD, make these edits:

1. Press cursor key [B] to access the VDF cutoff.

2. Using the [Down] button, enter -1.

3. Press cursor key [E] to access the Vel.Sens.

4. Using the [Up] button, enter +2.

5. Press cursor key [G] to access the Release parameter.

6. Using the [Up] button, enter +10.

Play the keyboard. Our steel string guitar is now a nylon string classical guitar. Experiment with the Velocity sensitivity and the Release and see what type of Harp sound is available.

Here's what I came up with: Vel. Sens. = +4 and Release = +10.
Not perfect, but very close coming from the LCD alone. Just these quick edits have given us two new sounds.

7. Save your edit to memory.

Here's another example.
Call up *I14 DistGuitar.*

1. Press cursor key [A] to access the OSC Balance.

2. Using the [Down] button, enter -3. This gives the guitar a more heavy sound.

3. Press cursor key [B] to access the VDF Cutoff.

4. Using the [Down] button, enter -4.

5. Press cursor key [D] to access the VDFA KBD Track.

6. Using the [Down] button, enter -10.

The Osc Balance setting interacting with the VDF cutoff make for a solid heavy metal guitar timbre. Other edits can be made in the effects section. Positive values in the Osc Balance moves the sound towards a single coil Strat sound. The KBD tracking extended the useable range to mimic the loss of upper harmonics that happens when that much distortion is present. Several guitar sounds can be found with some experimentation.

Making Different Sounds From the Original Sound

Now let's edit the programs to make completely different sounds from the originals. We can accomplish this by changing the program's essential characteristics. For example, we can add a percussive click to the beginning of a wind instrument or sustain a harpsichord. Here are some examples.

Change Vibes into a Steel Guitar

Try this:
Call up *I15 Vibes.*

1. Press cursor key [B] to access the VDF cutoff.

2. Using the [Down] button, enter +04.

3. Press cursor key [F] to access the Attack parameter.

4. Using the [Up] button, enter +4.

5. Press cursor key [G] to access the Release parameter.

6. Using the [Up] button, enter +2.

Our Vibes program is now a Pedal Steel. Moving the Attack to +4 eliminates the Mallet strike and increasing the Cutoff adds the Steel quality.

Varying the VDF Cutoff from the original Vibe sound can produce other sounds in the Mallet family such as Xylophone or Marimba.

Cange Organ to Spooky Sound

Here's another one to try:
Call up *I17 Organ 2.*

1. Press cursor key [B] to access the VDF cutoff.
2. Using the [Down] button, enter -06.
3. Press cursor key [E] to access the Vel.Sens. (velocity sensitivity) parameter.
4. Enter +10.
5. Press cursor key [F] to access the Attack parameter.
6. Using the [Up] button, enter +4.
7. Press cursor key [G] to access the Release parameter.
8. Using the [Up] button, enter +2.
9. Press cursor key [H] to access the Effect parameter.
10. Enter +05.

Play the keyboard. Our Organ program now has a Spooky feel. Moving the Attack to +4 eliminates the percussive strike and increasing the Release and the Effect adds that Ethereal quality.

Change Dream Pad to Synth Piano

Let's call up *I20 Dream Pad.*

1. Press cursor key [A] to adjust the OSC Balance.Enter -01.
2. Press cursor key [B] and set the VDF Cutoff parameter to +03.
3. Press cursor key [E] and set the Velocity Sensitivity to -10.
4. Press cursor key [F] to set the Attack Time to -10.
5. Press cursor key [G] to set the Release time to -10.

6. Press cursor key [H] and set the Effect time to -4.

The spacey Dream pad is now a percussive Synth sound, good for rhythmic comping patterns. For a more sustain pad sound, enter positive numbers to the Osc balance paramters.

Add Velocity Sensitivity for a piano-ish touch.

Change MagicPiano to New Age Synth Pad

Call up *I21 MagicPiano.*

1. Press cursor key [A] to adjust the OSC Balance.Enter +04.

2. Press cursor key [D] and set the VDFA Keyboard Track parameter to -10.

3. Press cursor key [F] to set the Attack Time to +02.

4. Press cursor key [G] to set the Release time to +02.

5. Press cursor key [H] and set the Effect time to +02.

Change SynMallet to Flute

Call up *I28 SynMallet.*

1. Press cursor key [B] to adjust the VDF Cutoff.Enter +01.

2. Press cursor key [D] and set the VDFA Keyboard Track parameter to -08.

3. Press cursor key [F] to set the Attack Time to +03.

4. Press cursor key [G] to set the Release time to -04.

5. Press cursor key [H] and set the Effect time to +01.

Moving the Attack time to +03 effectively bypasses the mallet strike sound in the MultiSound. This leaves us the sustaining part of the waveform which is very flute like.

Change Harpsichord into an Acoustic Guitar

1. Press cursor key [B] to adjust the VDF Cutoff.Enter -05.

2. Press cursor key [D] and set the VDFA Keyboard Track parameter to -04.

3. Press cursor key [G] to set the Release time to +04.

4. Press cursor key [H] and set the Effect time to +04.

The guitar sound is achieved by using the VDF cutoff to filter out the upper harmonics.

Change the Pan Wave into a Synth Double Reed

Call up *I58 Pan Wave.*

1. Press cursor key [B] to access the VDF Cutoff parameter. Set to -2.

2. Set cursor key [F], Attack time, to +03.

3. Set the Release time, cursor key [G], to +01.

4. Press cursor key [H], Effect Balance, to +01.

This turns the Pan Wave into a Double Reed instrument. It's definitely a synth sound, not a replica of another instrument, but shares some of the timbre characteristics of the double reed family.

These are just a few examples. Undoubtedly, you'll find many more as you experiment with each Program. And this is just using the parameters on the LCD!

Section II

Effects

It's easy to take the Effects section for granted in the M1. They always compliment the Program or Combination they're assigned to, but never call attention to themselves. For the creation that's just short of completion, they're the perfect spice.

Effects 1 - 25 are stereo effects (reverb, delay, etc.). Effects 26-33 are dual effects. Adding just the right effect in the right amount can make a good program GREAT! That's just what we're after in this chapter.

Assigning The Effects to Programs and Combinations

Luckily for us, setting the Effects for Programs and Combinations are exactly the same procedure.

1. Press [Edit Prog] to assign Effects to a Program. Press [Edit Combi] to assign Effects to a Combination.

2. Press [#8] on the 10 key pad. We're at Effect 1 page. This is where we select the Effect we need.

3. Make your selection with the Value Slider and the [Up/Down] buttons. The display on the right reads [SELECT].

4. Press [F] to turn the Effect ON.

5. Press [F] again. Press [Down] if you want to mute the Effect. The display reads OFF.

6. Press [Page +] twice to access the Effect 2 page.

7. Make your selection with the Value Slider and the [Up/Down] buttons. The display on the right reads [SELECT].

8. Press [F] to turn the Effect ON.

9. Press [F] again. Press [Down] if you want to mute the Effect. The display reads OFF.

Chapter 13

Reverb Group

Reverb, by definition, means to *echo back.* These settings are the BIG reverb sounds that have become so fashionable. An illusion of space and ambience is created with these settings, convincing the ear that the sound is in a live environment. The stereo feature only enhances the effect further.

Hall

This reverb setting has one of the longest reverb times of all the presets, checking in at 3.5s (s = seconds). Reverb times up to 9.9s are available.

Listen to Hall in *I03 Ooh/Ahh, I04 Guitar 1* (which is a combination of 2 Hall effects), and *I05 BottleBell.* These are good examples of what this effect sounds like. These are slightly edited from the default values, but the result is the same.

Korg has done a pretty good job of assigning the appropriate effects to their sounds. However, the Hall effect may need a slight adjustment for a certain situation you're in. Here's a few quick edits.

DRY:EFF Balance -

This edit is by far the most useful for quick fix ups. The number on the left of the colon is the dry signal level (no effect) and the number to the right of the colon is the wet signal (sound with effect). If something isn't right with the effects, I suggest tweaking this parameter first before changing the effects themselves.

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECTS 1   Hall                     Reverb Time [ s ]
  3.5   D055   E46   HD40            L-05   H+00  60:40
```

2. Press [H] cursor key to access the DRY:EFF Balance parameter. Use the Value slider and the [Up/Down] buttons to enter the value.

Ensemble Hall

The Ensemble Hall effect has the shortest reverb time of the Hall presets. This effect is very similar to Hall, use Ensemble Hall if the Hall preset seems too imposing.

Hear the Ensemble Hall effect in I09 *Drums #1*, *I11 E.Piano* 1, and *I12 Trumpet.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1    Ensemble Hall            Reverb Time [ s }
2.8  D030   E46   HD40               L-03   H+00  60:40
```

2. Press [B] to access the Pre Delay Time parameter. This number is represented in milleseconds (ms).

This parameter keeps the reverb from sounding for the specified amount of time. This simulates the room *length* or you can think of it as how long it takes the sound to fill the room and bounce back. Sometimes, this can give the illusion of a bigger room than a longer reverb time.

3. Use the Value slider and the [Up/Down] buttons to enter the value.

Concert Hall

The Concert Hall effect has the longest reverb time of the Hall presets. This effect is very similar to the others, but is very, very ambient sounding. This is the big marble room with nothing in it to soak up the sound.

Hear the Concert Hall effect in *I30 Lore, I33 Bottles*, and *I42 Overture.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1      Concert Hall                 Reverb Time [ s ]
3.8  D120   E46    HD40                L+00  H-02    60:40
```

2. Press [D] to access the High Damp parameter.

This parameter cuts off the high end from the reverb over a specified amount of time. Both are controlled with this parameter.

This simulates what's in the room to effect the sound. A higher number represents many objects in the room that muffle the sound to differing degrees.

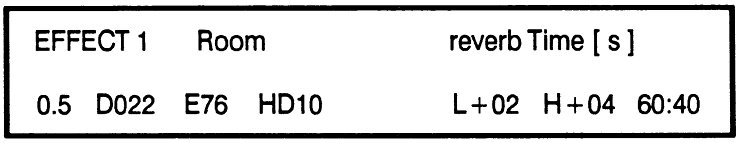
3. Use the Value slider and the [Up/Down] buttons to enter 00. Listen to the reverb. Lots of high end in it. Enter 99. Listen to the reverb now. It's easy to hear the difference in the high end. Using the High Damp can make the reverb sound natural.

Room

The Room effect has the shortest reverb time of the Reverb Group presets. This setting gives an ambient effect to the sound, and fattens up the sound as well. Very warm sounding.

Hear the Room effect in *I55 Metal Hit* and *I26 A.Bass*.

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.



```
EFFECT 1    Room                 reverb Time [ s ]
0.5  D022  E76  HD10             L+02  H+04  60:40
```

2. Press [F] and [G] to access the EQ Low and EQ High parameters.

This parameter affects the reverb sound ONLY. There is no effect on the Program itself.

Boosting the Low end adds a boominess to the sound that helps to fill out the A.Bass. Use the High EQ to add clarity or edge.

3. Use the Value slider and the [Up/Down] buttons to enter the value.

Large Room

The Large Room effect is the next step in terms of reverb times. This effect is very similar to Room, use Large Room if more ambience than Room is needed.

Hear the Large Room effect in *I39 Pop, I83 Stratos.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1      Large Room              Reverb Time [ s ]

1.5   D030    E76    HD30             L+02  H+04  60:40
```

Maximize the fullness effect of the reverb by boosting the Pre Delay. Remember this parameter keeps the reverb from sounding for a specified amount of time. If the sound is little harsh, try tweaking the High Damp and the High EQ - in that order.

Live Stage

The Live Stage effect is the longest *Room type reverb. This effect is shortest time preset for true ambience effects. This setting doesn' fatten up the sound like Room or Large Room does.*

Hear the Live Stage effect in *I81 Digital* 2, *I66 Synth Bass3,* and *I82 Mute Trp.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1      Live Stage              Reverb Time [ s ]

2.0   D020    E60    HD20             L+03   H+00   60:40
```

Boost the Pre Delay level to maximize the effect of the reverb. Balance the Pre Delay effect with the EQ section so that the reverb has a natural timbre. Try adjusting the High Damp.

Early Reflection Group

Reverb is a series of sounds reflected and resounding in a given setting. The Early Reflection Group is the initial "bounce back" of sound in a given room or setting. With this section, we're able to add even more detail to the reverb effect.

Early Reflection 1

The Early Reflection 1 effect is the quickest in this group.
This setting adds that digital reverb *attack* sound to the beginning.

Hear the Large Room effect in *I89 Drop*.

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1      Early Ref 1        E/R  Time
170ms         D030               L+00  H+00  60:40
```

2. Press [H] to access the DRY:EFF Balance. The higher the effect value (the number on the right), the more attack or definition the effect will provide. Use this parameter to balance the effect not only against the dry signal, but against the other effect as well.

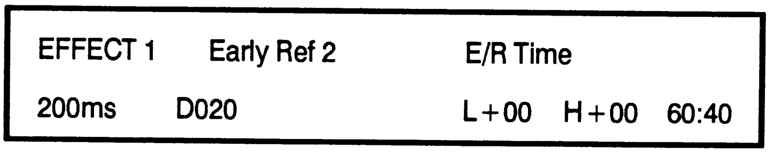
3. Enter the value with the Value Slider and the [Up/Down] buttons.

Early Reflection 2

The Early Reflection 2 effect is the longest in this group. The digital reverb attack is still there, but not as prominent. This effect by itself resembles a short echo effect.

Hear the Early Reflection 2 effect in *I69 FingerSnap.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.



```
EFFECT 1    Early Ref 2          E/R Time
200ms       D020                 L+00  H+00  60:40
```

2. Press [C] to access the Pre Delay parameter. The higher the value, the longer the echo effect. Because this reverb time is so short, it can often be used like a gated reverb.

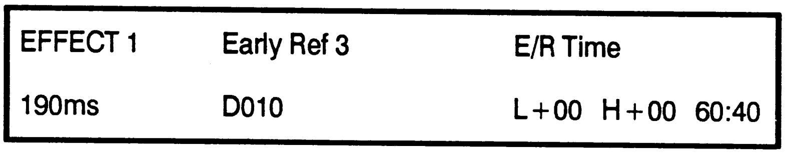
3. Enter the value with the Value Slider and the [Up/Down] buttons.

Early Reflection 3

The Early Reflection 3 effect is the quickest Pre Delay setting in this group. This lets it fatten up the sound in various ways.

Hear the Early Reflection 3 effect in *I19 Pole.*

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.



```
EFFECT 1        Early Ref 3          E/R Time
190ms           D010                 L+00  H+00  60:40
```

2. Press [F] to access the EQ Low and press [G] to access the EQ High parameter. Boosting the highs adds cutting quality to the sound without making it harsh. The lows accent the sounds lower end quality without making it too boomy.

3. Enter the value with the Value Slider and the [Up/Down] buttons.

Chapter 14

Delay Group

Delay is a fancy word for echo. Very often, a delay effect gives the same illusion of space that a reverb does, but the delay gives discrete echos.

Stereo Delay

The Stereo Delay effect is achieved with two delays. Each delay is a two input - two output system, for true stereo. There's plenty you can do with this parameter all by itself.

1. Using the [Page +/-] buttons, access the Effect parameter page. It looks like this.

```
EFFECT 1    Stereo Delay           Time L [ ms ]
L250   R260   F+50   HD10          L+00  H+00  70:30
```

The Cross Delay parameter page has the same parameters, so we'll look them over together.

2. Press [A] to access the (Delay) Time L(eft). As one would expect, it defines the delay time for the Left delay. The time changes in millesecond increments. The range is from 0-500 milleseconds (ms).

3. Press [B] to access the Time R(ight). This is exactly the same as the Time L parameter, except that it's for the delay on the right..

4. Press [C] to access the Feedback [%] parameter. This control routes part of the signal from the output of the delay to the input again. At longer delay times this produces an echo effect. Higher numbers increase the amount of signal to the delay. Negative numbers result in out of phase signals. That situation works particularly well with shorter delay times.

5. Press [D] to access the High Damp parameter. This works in the same manner as in the Reverb groups. Higher numbers quickly cut off the high end. This helps make the Delay effect sound natural. Range is 0-99%.

6. Press [F] to access the EQ Low parameter. The EQ Low works like a standard Bass control. This parameter affects the delay signal only.

7. Press [G] to access the EQ High parameter. The EQ High works like a standard Treble control. This parameter affects the delay signal only.

8. Press [H] to access the DRY:EFF parameter. This adjusts the balance ratio between the M1 sound and the delayed sound. The higher the value the louder the parameter.

9. Enter the values with the Value Slider and the [Up/Down] buttons.

Cross Delay

The Cross Delay is the same system that we just went through. The one difference is that the feedback signal from the first delay is routed back to the second delay. And, the signal from the second delay is routed to the input of the first delay. The signal gets processed through both delays. A higher feedback level increases the number of times the sound is processed.

Chapter 15

Chorus Group

The Chorus effects, like the Delay effects, are stereo. They're made of two chorus circuits. Chorus adds a warm, ambient character to the sound. It fattens up sounds by detuning them from the dry signal, and by spreading them across the stereo field.

Remember how we mentioned that out of phase signals are so effective with shorter delay times? Surprise! Stereo Chorus I signals are out of phase. This is the difference between Stereo Chorus I and II. Stereo Chorus II's signals are not out of phase. The chorus is nothing more than a short delay with modulation.

The parameter selections for Stereo Chorus I and Stereo Chorus II are the same. See the illustration.

```
EFFECT 1     Chorus 1              Mod Depth

M60    50.30    D010    TRI        L+00    H+00   60:40
```

1. Press [A] to access the Mod(ulation) Depth parameter. Chorusing a sound is accomplished by detuning the sound to different degrees. This is done with the Modulation Depth and Modulation Speed. They work together. The depth level determines how intense the detuning or modulation effect will be.

2. Press [B] to access the Mod(ulation) Speed parameter. The Speed sets how fast the detuned signal goes from its highest point to its lowest. Slower effects are less imposing and spacious sounding, while faster speeds provide a more radical sound. It's great if you're synthesizing something that's *supposed* to be out of tune like a honky tonk piano or clavinet.

3. Press [C] to access the (Delay) Time [ms] parameter. This sets the time between the dry signal and the chorused signal to the output. Again, the higher the value, the more imposing the effect.

4. Press [D] to access the Waveform parameter. The original chorusing effects would modulate the signal with a sine wave only. This provided a smooth sweep up and down for the detuned signal. But for the more adventurous, it was not enough.

If you somehow run out of choices on this keyboard, the M1 gives you another chance to be different with two waveforms in the Chorus. The first is the standard Sine wave. The second is a similar, but different Triangle wave.

5. Press [F] to access the EQ Low [dB] parameter.The EQ Low works like a standard Bass control. This parameter affects the chorus signal only.

6. Press [G] to access the EQ High [dB] parameter.The EQ High works like a standard Treble control. This parameter affects the chorus signal only.

7. Press [H] to access the DRY:EFF Balance parameter.Press [H] to access the DRY:EFF parameter. This adjusts the balance ratio between the M1 sound and the chorused sound. The higher the value the louder the parameter.

8. Enter the values with the Value Slider and the [Up/Down] buttons.

Chapter 16

Flanger Group

The parameter selections for Flanger and Cross Flanger are the same. See the illustration.

```
EFFECT 1   Flanger                  Mod Depth

M70  50:18   D00   F-75    SIN      L+00  H+00   40:60
```

1. Press [A] to access the Mod(ulation) Depth parameter. Flanging a sound is accomplished by detuning the sound to different degrees. This is done with the Modulation Depth and Modulation Speed. They work together. The depth level determines how intense the detuning or modulation effect will be.

There are two differences between Flanging and Chorusing. First, the flange circuit contains the feedback feature for a more pronounced effect. Second, the delay time for flanging is slightly shorter than the chorus delay time.

2. Press [B] to access the Mod(ulation) Speed parameter. The Speed sets how fast the detuned signal goes from its highest point to its lowest. Slower effects are less imposing and spacious sounding, while faster speeds provide effects such as simulated pitch shift, timbre shifts, to bizarre filter blurbs. Heavy metal guitarists love this effect - add to the distortion guitar.

3. Press [C] to access the (Delay) Time [ms] parameter. This sets the time between the dry signal and the flanged signal to the output. Again, the higher the value, the more imposing the effect.

4. Press [D] to access the Feedback [%] parameter.This control routes part of the signal from the output of the flanger to the input again. Higher numbers increase the amount of signal to the delay. Negative numbers result in out of phase signals.

5. Press [E] to access the Waveform parameter. Like the original chorus effects, flangers would modulate the signal with a sine wave only. This provided a smooth sweep up and down for the detuned signal. Like the chorus, there are two waveforms in the Flanger. The first is the standard Sine wave. The second is Triangle wave.

6. Press [F] to access the EQ Low [dB] parameter.The EQ Low works like a standard Bass control. This parameter affects the flanger signal only.

7. Press [G] to access the EQ High [dB] parameter.The EQ High works like a standard Treble control. This parameter affects the flanger signal only.

8. Press [H] to access the DRY:EFF Balance parameter.Press [H] to access the DRY:EFF parameter. This adjusts the balance ratio between the M1 sound and the flanged sound. The higher the value the louder the parameter.

9. Enter the values with the Value Slider and the [Up/Down] buttons.

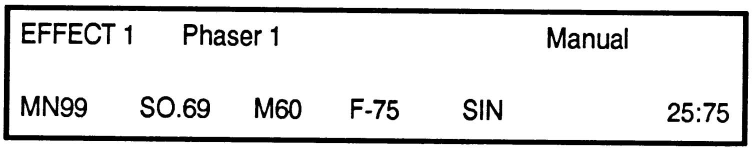
Cross Flanger

The Cross Flanger is the same as the Flanger we just looked at. The difference is that the feedback signal from the first delay is routed back to the second flanger. And, the signal from the second flanger is routed to the input of the first flanger. The signal gets processed through both flangers. A higher feedback level increases the number of times the sound is processed. Super Flange!

Chapter 17

Phase Shifter Group

Phasing is accomplished by moving one signal out of phase from another signal and then moving it back in phase again. This is done with the Modulation Depth and Modulation Speed parameters. They work together. The depth level determines how intense the phasing effect will be. Here's the parameter selections for Phase Shifter I and Phase Shifter II. See the illustration.



```
EFFECT 1   Phaser 1                       Manual

MN99   SO.69   M60   F-75   SIN                25:75
```

1. Press [A] to access the Manual parameter. This sets the center frequency that the phase shift affects.

2. Press [B] to access the Mod(ulation) Speed parameter. The Speed sets how fast the out of phase signal goes from its furthest point out of phase, back to being in phase. Slower effects are less imposing and spacious sounding, while faster speeds provide effects such as timbre shifts or tremelos.

3. Press [C] to access the Modulation Depth parameter. This sets the intensity of the phase shift. Again, the higher the value, the more imposing the effect.

4. Press [D] to access the Feedback [%] parameter.This control routes part of the signal from the output of the phase shifter to the input again. Higher numbers increase the amount of signal to the delay. Negative numbers result in out of phase signals.

5. Press [E] to access the Waveform parameter. The waveform defines the path for the smooth sweep up and down for the phase shifted signal. Like the chorus, there are two waveforms in the Phaser. The first is the standard Sine wave. The second is Triangle wave.

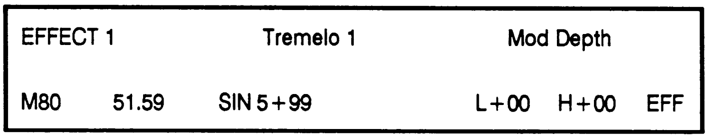
Phase Shifter II

Phase Shifter II is identical to Phase Shifter I, except for one detail. The input to Phase Shifter II is NOT inverted, while it IS inverted for Phase Shifter I (out of phase - again!).

Chapter 18

Tremelo Group

The tremelo effect affects the volume of the program. Turning the volume up and down in smoth, even sweeps accomplishes the tremelo effect. Technology can do more than that however. The M1 has two waveforms, depth controls, and can vary the volume quicker and smoother than can be done by hand. See the illustration.



```
EFFECT 1            Tremelo 1            Mod Depth

M80    51.59    SIN 5+99            L+00   H+00   EFF
```

1. Press [A] to access the Modulation Depth parameter. This sets the intensity of the tremelo. The higher the value, the more imposing the tremelo effect.

2. Press [B] to access the Mod(ulation) Speed parameter. The Speed sets how fast the signal's amplitude goes from its highest point to it's lowest point,then back again. Slower effects make a waivering effect without pitch bend while faster rates are nervous sounding.

3. Press [C] to access the Waveform parameter. The waveform defines the path for the smooth sweep up and down for the output signal. Like the chorus, there are two waveforms in the Tremelo. The first is the standard Sine wave. The second is Triangle wave.

4. Press [D] to access the Shape parameter. This control changes the basic shape of the waveform. Positive numbers round out the edges and the peaks are smoothed over. The volume swells to its peak and gradually makes its way to its minimum point. Negative numbers provide a sharp peak at the ends of their cycle. When the signal reaches its peak, it immediately starts back down, leaving a sharp end to the wave shape.

5. Press [F] to access the EQ Low [dB] parameter.The EQ Low works like a standard Bass control. This parameter affects the tremelo signal only.

6. Press [G] to access the EQ High [dB] parameter.The EQ High works like a standard Treble control. This parameter affects the tremelo signal only.

7. Press [H] to access the DRY:EFF Balance parameter.Press [H] to access the DRY:EFF parameter. This adjusts the balance ratio between the M1 sound and the tremelo signal. The higher the value the louder the parameter.

8. Enter the values with the Value Slider and the [Up/Down] buttons.

Tremelo II

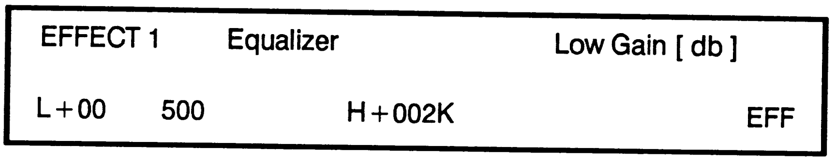
Tremelo II is identical to Tremelo I except for one detail. The input to Tremelo II is NOT inverted, while it IS inverted for Tremelo I.

Chapter 19

Equalizer Group

The Equalizer is a two band circuit with adjustable center frequencies for the high band and low band.

- The Low frequency is adjustable from 250 Hz to 1K.
- The High frequency is adjustable from 1K to 4K.



```
EFFECT 1      Equalizer                      Low Gain [ db ]

L+00    500            H+002K                            EFF
```

1. Press [A] to access the Low Gain parameter. The Gain is adjustable from + 12 to -12.

2. Press [B] to access the Low Frequency parameter.The EQ Low sets the frequency the Low Gain parameter will boost or cut. This is more sophisticated than a standard Bass control in that the EQ circuit can be tailored to the situations needs.

3. Press [E] to access the High Gain parameter. The Gain is adjustable from +12 to -12.

4. Press [F] to access the High Frequency parameter.The EQ High sets the frequency the High Gain parameter will boost or cut. This is more sophisticated than a standard Treble control in that the EQ circuit can be tailored to the upper midrange if needed.

5. Press [H] to access the DRY:EFF Balance parameter.Press [H] to access the DRY:EFF parameter. This adjusts the balance ratio between the straight sound and the EQ'ed signal. The higher the value the louder the parameter.

6. Enter the values with the Value Slider and the [Up/Down] buttons.

Chapter 20

Distortion/Overdrive Group

The Distortion/Overdrive Group is a long overlooked effect in keyboard land. This classic effect is the sound of an amplifier or any preamp circuit being pushed past its limits. The result is audio distortion. Although this is sometimes undesirable, the results are often effective.

Over Drive

1. Press [A] to access the Drive parameter. This parameter sets the level of the input signal to the overdrive. The higher the value, the more distortion.

2. Press [B] to access the Level parameter. After setting the desired Drive amount, adjust the volume of the effect here. This parameter is necessary because turning up the Drive level can change the level of the program.

3. Buttons [F, G, and H] are the same Low EQ, High EQ, and EFF/BAL controls found in the Tremelo and numerous other effects.

```
EFFECT 1    Over Drive                  Drive

D080        L015                        L+00    H+00    Eff
```

Distortion

The Over Drive effect simulates a natural, smooth distortion similar to the distortion that comes from warmed up tubes that are pushed slightly too hard.

The Distortion effect however, is very harsh, raw, pushed to the max effect.

1. Press [A] to access the Distortion parameter. Like the Drive parameter in the previous effect, this increases the signal to the input, causing more distortion.

2. Press [B] to access the Level parameter. Because increasing the input level for more distortion can alter the overall volume, this Level parameter is here to compensate for it. Level is adjustable from 0 - 100.

3. Press [F] to access the EQ Low parameter. Another handy bass control.

4. Press [H] to access the DRY/EFF parameter. This adjusts the balance ratio between the straight sound and the distorted signal. The higher the value the louder the parameter.

```
EFFECT 1     Distortion                       Distortion

D080     L020                                 L+00    EFF
```

Chapter 21

Exciter, Symphonic Ensemble, and Rotary Speaker Group

Exciter Group

The Exciter effect adds clarity and sibilance to the Program. It helps bring the program to front of the mix without having to turn it up.

1. Press [A] to access the Blend parameter. Positive numbers set the balance between the processed and unprocessed program in favor of the processed program. Negative numbers set the balance in favor of the unprocessed program. In effect, higher numbers result in a more processed or clearer sounding program.

2. Press [B] to access the Emphatic Point parameter. This sets the central frequency that the exciter effect emphasizes. The adjustable range is from 1 - 10. Ten is the highest frequency and 1 is the lowest. This lets us use the effect in the range of the sound that we need it in.

3. Buttons [F, G, and H] are the identical EQ and DRY/EFF circuits we've encountered in almost all the effect pages.

EFFECT 1	Exciter	Blend		
B+99	EP05	L+00	H+00	EFF

Symphonic Ensemble

The Symphonic Ensemble effect is another member of the chorus family. It is best used to make a solo instrument into an ensemble type sound. It achieves this through greater modulation than the standard chorus.

1. Press [A] to access the Modulation Depth parameter. Adjustable range is from 0 - 99. The higher the number the higher the Ensemble effect.

2. Buttons [F, G, and H] are the identical EQ and DRY/EFF circuits we've encountered in almost all the effect pages.

EFFECT 1	Symphonic Ens	Mod Depth		
M00		L+00	D+00	50:50

Rotary Speaker Group

A must for realistic organ programs, this effect simulates the rotating speaker effect created by the Leslie speaker.

1. Press [A] to access the Modulation Effect parameter. This is the basis for the entire effect, so in reality, it controls the effect's overall depth.

2. Press [C] to access the Speed Ratio parameter. This parameter sets the ratio of the rotation speed of the high range speaker versus the rotation speed of the low range speaker.

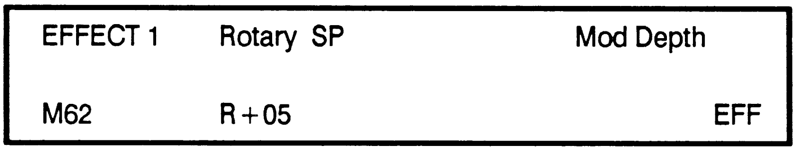
Positive numbers increase the ratio in favor of the high range speaker (the high range speaker is rotating faster than the low range speaker). This results in more of the effect in the high end.

Negative numbers increase the ratio in favor of the low range speaker for more of the effect in the low end.

3. Press [H] to access the DRY/EFF balance parameter. This adjusts the balance between the dry, unprocessed sound and the sound with the Rotary Speaker effect in it.

4. One characteristic of the Leslie speaker was its slow shift from slow to fast speeds and vice versa. For even more realism, you can set the M1 to simulate this shift in speed with a pedal. See pedal assign in Global mode for details.

Normally the pedal affects the EFF/DRY balance of the effect, but on this particular effect, it controls the Rotating Speed.



```
EFFECT 1    Rotary  SP                 Mod Depth

M62         R+05                             EFF
```

Chapter 22

Combination Effects Group

The combination effects group gives us even more multi-effect options than the dual digital effects system promises. These combinations are made up of the single effects we covered earlier in this chapter. I'll give a brief overview of each here. For more details see the individual effect description in this chapter.

The cursor keys [A-D] access the first effect parameters. The first effect is always Delay. Here they are.

1. Press [A] to access the Delay Time parameter.The range is from 0 to 500 milleseconds.

2. Press [B] to access the Feedback [%] parameter.The range is from -99 to +99. The negative values are out of phase from the original signal.

3. Press [C] to access the High Damp [%] parameter.The range is from 0 to 99.

4. Press [D] to access the DRY/EFF balance. Mix the amount of the Delay effect with this control.

The cursor keys [E-H] access the second effect parameters. The following describes the second effect and their parameters.

Delay/Hall

1. Press [E] to access the Reverb Time parameter.The range is from 0.2 to 9.9 seconds.
2. Press [F] to access the Pre Delay parameter.The range is from 0 to 150 milleseconds.
3. Press [G] to access the High Damp [%] parameter.The range is from 0 to 99.
4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/Room

1. Press [E] to access the Reverb Time parameter.The range is from 0.2 to 4.9 seconds.
2. Press [F] to access the Pre Delay parameter.The range is from 0 to 150 milleseconds.
3. Press [G] to access the High Damp [%] parameter.The range is from 0 to 99.
4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/E.Ref

1. Press [E] to access the E/R Time parameter. E/R stands for Early Reflection. The range is from 100 to 400 milleseconds.
2. Press [F] to access the Pre Delay parameter.The range is from 0 to 100 milleseconds.
3. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/Delay

The second Delay effect is the same as the first one, so there's no point in repeating it here. However, these delays are set up in stereo. The first delay is panned to the Left and the second delay to the Right.

Delay/Chorus

1. Press [E] to access the Mod(ulation) Depth parameter. The range is from 0 to 99.

2. Press [F] to access the Mod(ulation) Speed parameter. The range is from 0.03 to 30.0 Hz.

3. Press [G] to access the Waveform parameter.Two waveforms are available: SIN (sine wave) and TRI (triangle).

4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/Flanger

1. Press [E] to access the Mod(ulation) Depth parameter. The range is from 0 to 99.

2. Press [F] to access the Mod(ulation) Speed parameter. The range is from 0.03 to 30.0 Hz.

3. Press [G] to access the Feedback [%] parameter.The range is from -99 to +99. The negative values invert the phase of the feedback signal to the original input signal.

4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/Phaser

1. Press [E] to access the Mod(ulation) Depth parameter. The range is from 0 to 99.

2. Press [F] to access the Mod(ulation) Speed parameter. The range is from 0.03 to 30.0 Hz.

3. Press [G] to access the Feedback [%] parameter.The range is from -99 to +99. Negative values invert the feedback signal out of phase from the original input phase.

4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Delay/Tremelo

1. Press [E] to access the Mod Depth parameter.The range is from 0 to 99.

2. Press [F] to access the Mod Speed parameter.The range is from 0.03 to 30.0 Hz.

3. Press [G] to access the Shape parameter.The range is from -99 to +99.

4. Press [H] to access the DRY/EFF balance. Mix the amount of the effect with this control.

Chapter 23

Fine Tuning with Performance Controllers

This chapter details the bread and butter operations for the M1. These are step by step tutorials on the features that make the M1 a more versatile and easier machine to use.

Master Tune

1. Access the Global parameters by pressing the [GLOBAL] button.
2. The first page is the Master Tune page.
3. The parameter range is +/- 50. This range is within a half step. Positive numbers raise the pitch, and negative values lower them. For greater pitch range, see Transpose below.

Transpose

1. Access the Global parameters by pressing the [GLOBAL] button.
2. Press [#1] on the 10 key pad. This is the Transpose page.

3. The parameter range is +/- 12. This range is within one octave. Each increment is equal to one half step. Positive numbers raise the pitch, and negative values lower them. For fine tuning within a half step, see Master Tune above.

Footswitch Assignments

1. Access the Global parameters by pressing the [GLOBAL] button.

2. Press [#2] on the 10 key pad. Then press [Page +] to access the Pedal Assign page. Press cursor key [A] to assign Pedal 1 and cursor key [E] to assign Pedal 2. This page assigns functions to the pedals plugged into the Pedal Assign jacks in the back.

3. The functions assignable to the pedals are listed below.

- **Program Up** = Pressing on the pedal makes the program step up to the next program.
- **Program Down** = Pressing on the pedal makes the program step back to the previous program.
- **Seq Start/Stop** = Pressing on the pedal alternately starts and stops the Sequencer.
- **Effect 1 ON/OFF** = Pressing on the pedal alternately turns Effect 1 on and off.
- **Effect 2 ON/OFF** = Pressing on the pedal alternately turns Effect 2 on and off.
- **Volume** = Pressing on the pedal controls the overall Volume.
- **VDF Cutoff** = Pressing on the pedal makes the program brighter or softer by Opening or Closing the filters cutoff point. This is the same parameter under cursor key [B] in Program mode. Brighter or softer results are achieved depending on a forward or backward sweep of the pedal.
- **Effect 1 Cntl** = Pressing on the pedal increases the effect versus dry signal in Effect 1. Pulling back on the pedal reverses this control and lessens the effect and increases the straight unprocessed signal.

- **Effect 2 Cntl** = Pressing on the pedal increases the effect versus dry signal in Effect 2. Pulling back on the pedal reverses this control and lessens the effect and increases the straight unprocessed signal.
- **Data Entry** = When Data Entry is selected the foot pedal replaces the Value Slider. Select the parameter and adjust the value up and down with your foot.

Memory Protect

1. Access the Global parameters by pressing the [GLOBAL] button.

2. Press [#6] on the 10 key pad. This is the Program Memory Protect page. Press [Page +] to access the Combination Memory Protect page, and [Page +] again to access the Sequencer Memory Protect page.

3. All three of these pages are structured with the same format. Pressing [A] accesses the Internal memory and the Protect function can be switched ON and Off with the [Up/Down] buttons. Pressing [E] accesses the Card memory and the Protect function can be switched On and Off with the [Up/Down] buttons.

Velocity

VDF Velocity Sensitivity

1. Access the Program parameters by pressing the [EDIT PROG] button.

2. If the Program is a Single program, press [#3] on the 10 key pad. This is the VDF1 page. Press [Page +] twice to access the VDF1 Vel Sens page.

3. If the Program is a Double program, press [#2] on the 10 key pad. This is the VDF1 page. Press [Page +] twice to access the VDF1 Vel Sens page. Then press [#3] on the 10 key pad. This is the VDF2 page. Press [Page +] twice to access the VDF2 Vel Sens page.

4. Press cursor key [A] to access the Envelope Generator (EG) Intensity parameter. This is an overall depth control that determines to what degree Velocity can control the filter envelope and thus the

brightness/darkness qualities. Adjust with the [Up/Down] buttons. The higher the value, the more effect your technique has in respect to the timbre quality.

5. Press [C] to access the Envelope Generator (EG) Time parameter. This depth control interacts with the corresponding VDF envelope, and the other 4 parameters across the display.

When all four parameters (Attack Time, Decay Time, Slope Time, and Release Time) are set to zero, The EG Time parameter will have NO effect.

- Access the Attack Time parameter by pressing the [E] cursor key.
- Access the Decay Time parameter by pressing the [F] cursor key.
- Access the Slope Time parameter by pressing the [G] cursor key.
- Access the Release Time parameter by pressing the [H] cursor key.

The parameter values for each of these parameters are the same.

- " + " value speeds up the envelope rate the harder the keys are struck. The rate slows down the softer the keys are played.
- "-" value slows the envelope rate the harder the keys are struck. The envelope rate gets faster the softer the keys are struck.
- "0" value cancels any effect on the rate from velocity.

VDA Velocity Sensitivity

1. Access the Program parameters by pressing the [EDIT PROG] button.

2. If the Program is a Single program, press [#4] on the 10 key pad. This is the VDA1 page. Press [Page +] once to access the VDA1 Vel Sens page.

3. If the Program is a Double program, press [#4] on the 10 key pad. This is the VDA1 page. Press [Page +] once to access the VDA1 Vel Sens page. Then press [#5] on the 10 key pad. This is the VDA2 page. Press [Page +] once to access the VDA2 Vel Sens page.

4. Press cursor key [B] to access the Amplitude parameter. This is an overall depth control that determines to what degree Velocity can control the loudness envelope and thus the loudness/softness qualities. Adjust with the [Up/Down] buttons. The higher the value, the more effect your technique has in respect to velocity.

5. Setting VDA1 to a positive value, and then setting VDA2 to the corresponding negative value results in a velocity crossfade effect. That is, when the keys are struck hard, VDA1 sounds. When the keys are played softly, VDA2 is heard.

6. Press [C] to access the Envelope Generator (EG) Time parameter. This depth control interacts with the corresponding VDA envelope, and the other 4 parameters across the display.

When all four parameters (Attack Time, Decay Time, Slope Time, and Release Time) are set to zero, The EG Time parameter will have NO effect.

- Access the Attack Time parameter by pressing the [E] cursor key.
- Access the Decay Time parameter by pressing the [F] cursor key.
- Access the Slope Time parameter by pressing the [G] cursor key.
- Access the Release Time parameter by pressing the [H] cursor key.

The parameter values for each of these parameters are the same.

- " + " value speeds up the envelope rate the harder the keys are struck. The rate slows down the softer the keys are played.
- "-" value slows the envelope rate the harder the keys are struck. The envelope rate gets faster the softer the keys are struck.

- "0" value cancels any effect on the rate from velocity.

Aftertouch

1. Access the Program parameters by pressing the [EDIT PROG] button.

2. Press [#7] on the 10 key pad. This is the Aftertouch page.

3. Press [A] to access the Pitch parameter. This control defines the interval the pitch will rise (if the parameter is a positive value) or fall (if the parameter has a negative value).

4. The values are in half step increments.

5. Press [B] to access the Pitch Modulation Generator (MG) parameter. This control defines the depth or intensity of the Pitch MG. With higher value, a more intense effect can be achieved through aftertouch.

6. Press [D] to access the VDF Cutoff parameter. This control defines the level of brightness the sound will increase by (if the parameter is a positive value) or the level of darkness the sound will become (if the parameter has a negative value).

7. Press [E] to access the VDF Modulation Generator (MG) parameter. This control defines the depth or intensity of the filter (VDF) MG. With higher value, a more intense effect can be achieved through aftertouch.

8. Press [G] to access the Amplitude parameter. This control defines the level the sound will increase (if the parameter is a positive value) or the level the sound will decrease (if the parameter has a negative value) when the keys are pushed harder.

Joystick

1. Access the Program parameters by pressing the [EDIT PROG] button.

2. Press [#7] on the 10 key pad. Press [Page +] once. This is the Joystick page.

3. Press [A] to access the Pitch Bend parameter. This control defines the interval the pitch will rise when the joystick is moved to the right (if the parameter is a positive value). The pitch will fall by the specified interval when the joystick is moved to the right if the parameter has a negative value.

4. Press [B] to access the VDF Sweep Intensity parameter. A positive number sets the intensity of the increase in bightness when the joystick moves to the right. A negative number sets the makes the sound progressively darker as the joystick moves to the right.

5. Press [D] to access the Pitch Modulation Generator Intensity parameter. A higher number sets a higher intensity to the effect when the joystick moves upwards.

6. Press [E] to access the Pitch Modulation Generator Frequency parameter. A higher number speeds up the rate of modulation to the pitch. This is Vibrato.

7. Press [G] to access the VDF Modulation Generator Intensity parameter. A higher number sets a higher intensity to the effect on the VDF when the joystick moves upwards.

8. Press [H] to access the VDF Modulation Generator Frequency parameter. A higher number speeds up the rate of modulation to the filter. The effect is sweeps, growls, and wah-wah's.

Appendix A

M1 Orchestral Combinations

In this appendix I'll describe some orchestral and big band combinations used by the industry's top arrangers. You should review Making a Combination (Chapters 8 & 9) for specific instruction on entering the parameters. The combinations here can be set two ways. One is a combination which they are here. Or, you can set up each combination with one sound per MIDI channel, which is the best scenario when puting sounds into voicing.

Have fun with these combinations. *Please see next page*

Combinations with I12 Trumpet

Trumpet with Flute in Unison

1. Set this up as a Layer Combination.
2. Call up *I18 Flute* and set the Level to 99.
3. Adjust the Trumpet level to 20.

Trumpet with Flute Up One Octave

1. Set this up as a Layer Combination.
2. Call up *I18 Flute* and set the Level to 99.
3. Adjust the Trumpet level to 20.
4. Access the third editing page in the [Edit Combi] mode.
5. Press cursor key [G] to access the Interval parameter. Enter + 12 to move the Flute up one octave.

Trumpet with Sax in Unison

1. Set this up as a Layer Combination.
2. Call up *I22 Sax* and set the Level to 80.
3. Adjust the Trumpet level to 99.

Trumpet with Sax Down One Octave

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I22 Sax.*
4. Set the Sax level to 65.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter -12. The trumpet and sax are now in octaves.

Trumpet with Guitar in Unison

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I04 Guitar.* If the situation calls for trumpet articulation, set the Level to 70.
4. For Guitar type parts, set the Guitar level to 90.

Two Trumpets in Unison

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I12 Trumpet.* Set the Level to 99. Even though this is the exact same sound, notice the timbre change.
4. Access the third editing page in the [Edit Combi] mode.
5. Press cursor key [H] to access the Detune parameter. Enter +07 to create a Fanfare Solo Trumpet sound. Chords sound synthish this way, because of the chorus type sweep that detuning creates.

Two Trumpets in Octaves

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I12 Trumpet.*
4. Set the (2nd) Trumpet level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter -12. The trumpets are now in octaves.

Trumpet with Double Reed in Unison

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I32 DoubleReed.* Set the Level to 99.
4. Access the third page in the [Edit Combi] mode.
5. The DoubleReed is an octave under the Trumpet. Press cursor key [G] , the Interval parameter, and enter + 12. The DoubleReed and the Trumpet are now in unison.

Trumpet with Double Reed in Thirds and Sixths

1. Set this up as a Layer Combination.
2. Assign the Trumpet to Layer 2. Adjust the level to 99.
3. Call up *I32 DoubleReed.* Assign it to Layer 1.
4. Set the DoubleReed level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter -08. The trumpet and double reed are now in thirds.
7. Set the trumpet and double reed to sixths by entering -03.

Trumpet with Dream Pad in Unison

1. Set this up as a Layer Combination.
2. Adjust the Trumpet level to 99.
3. Call up *I20 Dream Pad.*
4. Set the *Dream Pad* level to 90.

Combinations With I82 Mute Trp.

Mute Trumpet with Double Reed in Unison

1. Set this up as a Layer Combination.
2. Adjust the Mute Trumpet level to 99.
3. Call up *I32 DoubleReed.* Set the Level to 99.
4. The DoubleReed is an octave under the Mute Trumpet. Press cursor key [G] , the Interval parameter, and enter +12. The DoubleReed and the Mute Trumpet are now in unison.

Mute Trumpet with Flute Up One Octave

1. Set this up as a Layer Combination.
2. Adjust the Mute Trumpet level to 77.
3. Call up *I18 Flute.*
4. Set the Flute level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The trumpet and flute are now in octaves.
7. Press cursor key [H] to access the Detune parameter. Enter +7. This gives the flute an more transparent quality that fills the combination up a bit.

Mute Trumpet in Thirds

1. Set this up as a Layer Combination.
2. Adjust the Mute Trumpet level to 99.
3. Call up *I82 Mute Trumpet.*
4. Set the Mute Trumpet level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +04. The trumpets are now in thirds.

Combinations with Clarinet

Use the Clarinet sound I gave you in Chapter 4.

Clarinet with Sax in Octaves

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 99.
3. Call up *I22 Sax.*
4. Set the Sax level to 70.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The clarinet and sax are now in octaves.
7. Press cursor key [H] to access the Detune parameter. Enter +7. This gives the sax a smoother tone so it's not so harsh.

Clarinet with Sax in Thirds

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 94.
3. Call up *I22 Sax.*
4. Set the Sax level to 70.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +04. The clarinet and sax are now in octaves.

Clarinet with Flute in Unison

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 30.
3. Call up *I18 Flute.*
4. Set the Flute level to 99.

Clarinet with Flute One Octave Up

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 30.
3. Call up *I18 Flute.*
4. Set the Flute level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The clarinet and flute are now in octaves.

Clarinet with Double Reed One Octave Up

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 99.
3. Call up *I32 DoubleReed.*
4. Set the DoubleReed level to 80.
5. The Clarinet and DoubleReed are in octaves already. There's no need to transpose the double reed.

Clarinet with Double Reed in Unison

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 99.
3. Call up *I32 DoubleReed.*
4. Set the DoubleReed level to 80.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The clarinet and double reed are now in unison.

Two Clarinets with Double Reed One Octave Up

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 99.
3. Call up *I32 DoubleReed.*
4. Set the DoubleReed level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter -12. The clarinets and double reed are now in octaves.

Clarinet with Soft Horn in Octaves

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 25.
3. Call up *I87 Soft Horns.*
4. Set the Horns level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [H] to access the Detune parameter. Enter +9.

Clarinet with Soft Horn in Unison

1. Set this up as a Layer Combination.
2. Adjust the Clarinet level to 25.
3. Call up *I87 Soft Horns.*
4. Set the Soft Horns level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The clarinet and soft horns are now in unison.

Clarinet with Soft Horn and Double Reed in Unison

1. Set this up as a multi combination.
2. From the Program Select page, call up *I32 DoubleReed, I87 Soft Horns,* and the Clarinet sound. Turn any other Timbres off.
3. Set all parameters on the Key Window Top page to G9.
4. Set all parameters on the Key Window Bottom page to C-1.
5. Set all parameters on the Velocity Window Top page to 127.
6. Set all parameters on the Velocity Window Bottom page to 001.
7 Set the Output Level for the DoubleReed to 33, the Soft Horns to 99, and the Clarinet to 40.
8. On the Transpose page, move the Clarinet down one octave by entering -12.

Clarinet with Sax in Thirds and in the Bass

1. Set this up as a multi combination.
2. From the Program Select page, call up *I22 Sax* in *two* positions and the Clarinet sound. Turn any other Timbres off.
3. Set all parameters on the Key Window Top page to G9.
4. Set all parameters on the Key Window Bottom page to C-1.
5. Set all parameters on the Velocity Window Top page to 127.
6. Set all parameters on the Velocity Window Bottom page to 001.
7 Set the Output Level for the Sax to 99 and 70. Set the Clarinet to 70.
8. On the Transpose page, move the Clarinet up a third by entering +04.

Combinations With I52 Tuba/Flugel

Flugel with Soft Horn

1. Set this up as a multi combination.

2. From the Program Select page, call up *I87 Soft Horns* in *three* positions and *I52 Tuba/Flugel.* Turn any other Timbres off.

3. Set all parameters on the Key Window Top page to G9.

4. Set all parameters on the Key Window Bottom page to C-1.

5. Set all parameters on the Velocity Window Top page to 127.

6. Set all parameters on the Velocity Window Bottom page to 001.

7 Set the Output Level for the Soft Horns to 99, 22 and 50. Set the Flugel to 99.

8. On the Transpose page, set up seventh chord voicing like this. Set the Soft Horns to +00, +04, and +07. This is a major triad. Make the Flugel play the seventh by entering +10.

Flugel with Double Reed in Unison

1. Set this up as a Layer Combination.

2. Adjust the Flugel level to 99.

3. Call up *I32 DoubleReed.*

4. Set the DoubleReed level to 90.

Flugel with Double Reed in Octaves

1. Set this up as a Layer Combination.

2. Adjust the Flugel level to 99.

3. Call up *I32 DoubleReed.*

4. Set the DoubleReed level to 99.

5. Access the third editing page in the [Edit Combi] mode.

6. Press cursor key [G] to access the Interval parameter. Enter +12. The flugel and double reed are now in octaves.

Flugel with Double Reed in Thirds and Sixths

1. Set this up as a multi combination.

2. From the Program Select page, call up *I32 Tuba/Flugel* and *I32 DoubleReed.* Turn any other Timbres off.

3. Set all parameters on the Key Window Top page to G9.

4. Set all parameters on the Key Window Bottom page to C-1.

5. Set all parameters on the Velocity Window Top page to 127.

6. Set all parameters on the Velocity Window Bottom page to 001.

7 Set the Output Level for the Flugel to 99. Set the *DoubleReed* to 75.

8. On the Transpose page, move the TubaFlugel up a third by entering +04. Move the DoubleReed up one octave. The flugel and the double reed are now in thirds.

Combinations With I04 Guitar

Guitar with Flugel in Unison

1. Set this up as a Layer Combination.
2. Adjust the Guitar level to 99.
3. Call up *I52 TubaFlugel.*
4. Set the Tuba/Flugel level to 99.

Guitar in Octaves

1. Set this up as a Layer Combination.
2. Adjust the Guitar level to 67.
3. Call up *I04 Guitar.*
4. Set the Guitar level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter -12. The guitars are now in octaves.

Guitar in Thirds and Sixths

1. Set this up as a Layer Combination.

2. Adjust the Guitar level to 99.

3. Call up *I04 Guitar.*

4. Set the Guitar level to 99.

5. Access the third editing page in the [Edit Combi] mode.

6. Press cursor key [G] to access the Interval parameter. Enter +04. The guitars are now in thirds. Enter +09 to put the guitars in sixths.

Combinations with I15 Vibes

Vibes with Flugel in Unison

1. Set this up as a Layer Combination.
2. Adjust the Vibes level to 99.
3. Call up *I52 Tuba/Flugel.*
4. Set the Tuba/Flugel level to 99.

Vibes with Clarinet in Unison

1. Set this up as a Layer Combination.
2. Adjust the Vibes level to 99.
3. Call up the Clarinet sound used earlier.
4. Set the Clarinet level to 99.

Vibes with Guitar in Unison

1. Set this up as a Layer Combination.
2. Adjust the Vibes level to 99.
3. Call up *I04 Guitar.*
4. Set the Guitar level to 47.

Vibes with Piano and Guitar in Unison

1. Set this up as a multi combination.

2. From the Program Select page, call up *I01 Piano 16'*, *I04 Guitar, I15 Vibes,* and *I26 A.Bass.* Turn any other Timbres off.

3. Set the parameters on the Key Window Top page to G9 for the piano, guitar and vibes. Set the parameter to F#3 for the bass.

4. Set all parameters on the Key Window Bottom page to G3 for everything but the bass. Set the parameter to C-1 for the bass.

5. Set all parameters on the Velocity Window Top page to 127.

6. Set all parameters on the Velocity Window Bottom page to 001.

7 Set the Output Level for the piano to 77, the guitar to 39, the vibes to 99, and set the bass to 99.

8. On the Transpose page, leave the piano and vibes at +00. Move the guitar down one octave. Move the bass up one octave.

Combinations With I27 Strings

Strings with Flute in Unison

1. Set this up as a Layer Combination.
2. Adjust the Strings level to 80.
3. Call up *I18 Flute.*
4. Set the Flute level to 99. The flute warms the strings without taking anything away from the attack or top end.

Strings with Flute One Octave Up

1. Set this up as a Layer Combination.
2. Adjust the Strings level to 94.
3. Call up *I18 Flute.*
4. Set the Flute level to 99.
5. Access the third editing page in the [Edit Combi] mode.
6. Press cursor key [G] to access the Interval parameter. Enter +12. The strings and flute are now in octaves.
7. Press cursor key [H] to access the Detune parameter. Enter +7. This gives the flute more of an edge that cuts through the strings.

Combinations With Miscellaneous Brass

The following combinations contain split keyboard parameters. The timbres read from bottom notes on the left to top notes on the right. Some of the splits are also layered. Use the trombone sound I gave you in Chapter 4.

Trombone/Tenor & Soft Horns/Flugel

1. Set this up as a multi combination.
2. From the Program Select page, call up the Trombone sound, *I87 Soft Horns, I62 Tenor Sax*, and *I52 TubaFlugel.* Turn any other Timbres off.
3. Set the parameters on the Key Window Top page. Set the trombone to G3. Set the soft horns and the tenor sax to B4. Finally, leave the flugel to G9.
4. Set all parameters on the Key Window Bottom page as follows. Leave the trombone to C-1. Set the soft horns and the tenor sax to G#3, and set the flugel to C5.
5. Set all parameters on the Velocity Window Top page to 127.
6. Set all parameters on the Velocity Window Bottom page to 001.

7 Set the Output Level for the trombone to 77, the soft horns to 75, the tenor sax to 50, and set the flugel to 99.

8. On the Transpose page, leave the trombone at +00. Move the flugel down one octave. Move the soft horns and tenor sax up one octave.

Tenor & Trombone/Tenor & Soft Horn/Flugel

Let's add a tenor to the trombone in the last combination.

1. Enter *I62 Tenor Sax* as T5 (Timbre 5).
2. Enter G3 for the Key Window Top parameter.
3. Leave the Key Window Bottom to C-1.
4. Leave the Velocity Window Top and Bottom to 127 and 001 respectively.
5. Set the Output level to 40.
6. Leave the Transpose parameter to +00.

Two Tenors/Trombone

1. Set this up as a multi combination.
2. From the Program Select page, call up I62 Tenor Sax and assign then to two positions, and the Trombone sound. Turn any other Timbres off.
3. Set the parameters on the Key Window Top page to G9.
4. Set all parameters on the Key Window Bottom page to G3. the bass.
5. Set all parameters on the Velocity Window Top page to 127.
6. Set all parameters on the Velocity Window Bottom page to 001.

7 Set the Output Level for the tenor to 70, and set the trombone to 99.

8. On the Transpose page, leave the tenor sax and trombone at +00. The horns are now in unison.

Conclusion

The Korg M1 is perhaps the technological breakthrough we've been waiting for. The concept of an all-in-one affordable keyboard that actually sounded good was the stuff dreams were made of.

Of course, the M1 doesn't make music for you. The M1 gives you the tools to explore and realize your creative potential. May it serve you well.

Bobby

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The Next MIDI Book

By Dan Walker and Lorenz Rychner
With Phil Shackleton
Illustrated,
$21.95 ppd

For the college market, this would be considered a second semester book. Contains: from transmitter to receiver, distributing the MIDI data, the topics: what MIDI is talking about, binary numbering system, the hexadecimal numbering system, converting numbers across, status bytes and data bytes, overview of message types, note on, note off and running status, two kinds of aftertouch, pitch bend, program changes, overview of control change and mode messages, continuous controllers, switch controllers, registered and non-registered parameters, channel mode messages, the MIDI receive modes, overview of system messages, system common messages, system real time, overview of system exclusive messages, manufacturer system exclusive messages, non-realtime sysex, universal real time sysex, epilogue.

Recording and Film Scoring With MIDI/SMPTE

By Dan Walker with Phil Shackleton
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This is an ideal book for schools with film classes, recording classes or recording labs. Written very simply. Starts with a SMPTE glossary, explains the two types of SMPTE (LTC and VITC), what SMPTE is used for, synchronizers and how they work, syncing MIDI to video, syncing MIDI to audio, syncing audio to audio/audio to video, syncing MIDI and audio to video, SMPTE and the performing stage: syncing to video clips, syncing to video and taped music, syncing to taped music and sequenced music, lighting effects.

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